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Assessment of the Public on Feasibility of Implementation and Adherence

A Harvard School of Public Health public opinion poll was conducted with a nationally representative sample of adults over the age of 18 years in the United States in September-October 2006 to explore the public's willingness to adhere to community mitigation strategies. A majority of the almost 1,700 respondents reported their willingness to follow public health recommendations for the use of NPIs, but this poll also uncovered serious financial and other concerns.[89] The respondents were first read a scenario about an outbreak of pandemic influenza that spreads rapidly among humans and causes severe illness. They were then asked how they would respond to and be affected by the circumstances that would arise from such an outbreak.[90]

Recognizing that their lives would be disrupted, most participants expressed willingness to limit contact with others at the workplace and in public places. More than three-fourths of respondents said they would cooperate if public health officials recommended that for 1 month they curtail various activities of their daily lives, such as using public transportation, going to the mall, and going to church/religious services. However, the poll respondents were not asked if they would be willing to follow those recommendations for longer periods in the case of a severe pandemic.

More than nine in ten (94 percent) said they would stay at home away from other people for 7-10 days if they had pandemic influenza. Nearly three-fourths (73 percent) said they would have someone to take care of them at home if they became ill with pandemic influenza and had to remain at home for seven to ten days. However, about one in four (24 percent) said they would not have someone to take care of them.

In addition, 85 percent of the respondents said they and all members of their household would stay at home for seven to ten days if another member of their household was ill. However, about three-fourths (76 percent) said they would be worried that if they stayed at home with a household member who was ill from pandemic influenza, they themselves would become ill from the disease. A substantial proportion of the public believed that they or a household member would be likely to experience various problems, such as losing pay, being unable to get the healthcare or prescription drugs they need, or being unable to get care for an older person or a person with a disability, if they stayed at home for 7-10 days and avoided contact with anyone outside their household.

If schools and daycare were closed for 1 month, 93 percent of adults who have major responsibility for children under age 5 who are normally in daycare or for children 5 to 17 years of age and who have at least one employed adult in the household think they would be able to arrange care so that at least one employed adult in the household could go to work. Almost as many (86 percent) believe they would be able to do so if schools were closed for 3 months.

When asked about possible financial difficulties due to missed work, a greater number of respondents reported they would face financial problems. While most employed people (74 percent) believed they could miss 7-10 days of work without having serious financial problems,

one in four (25 percent) said they would face such problems. A majority (57 percent) think they would have serious financial problems if they had to miss work for 1 month, and three-fourths of respondents (76 percent) thought they would have such problems if they were away from work for 3 months.

The Public Engagement Project on Community Control Measures Against a Severe Pandemic of Influenza was carried out in October and November 2006.[91] Two to three representatives from the organized stakeholder public were chosen from approximately ten major sectors likely to be affected by the measures (e.g., public health, education, private sector) to form a 50-member national level panel. In addition, a representative sample of approximately 260 citizens from the general public was recruited from Seattle, Washington; Syracuse, New York; Lincoln, Nebraska; and Atlanta, Georgia. Participants were presented with a scenario describing a severe pandemic and asked to consider their support for the use of the NPIs outlined above.

Approximately 95 percent or more of the citizens and stakeholders supported encouraging ill persons to stay at home, and the same high percentage supported canceling large public gatherings and altering work patterns for the purpose of social distancing. A lower percentage (83-84 percent) supported encouraging the members of households with ill persons to stay at home, and a similar percentage favored closing schools and large day care facilities for an extended period. Overall, approximately two-thirds of both citizens and stakeholders (64-70 percent) supported all of the interventions. Based on the scenario of a severe pandemic, nearly half (44-48 percent) of the citizens and stakeholders supported implementation of the interventions when pandemic influenza first strikes the United States, and approximately one-third of the public supported implementation when influenza first strikes in their State.

Although the findings from this poll and public engagement activity reported high levels of willingness to follow pandemic mitigation recommendations, it is uncertain how the public might react when a pandemic occurs. These results need to be interpreted with caution in advance of a severe pandemic that could cause prolonged disruption of daily life and widespread illness in a community. Adherence rates may be higher during the early stages of a pandemic and adherence fatigue may increase in the later stages. These results may not be able to predict how the public would respond to a severe pandemic in their community nor predict how the public will tolerate measures that must be sustained for several months. Changes in perceived risk from observed mortality and morbidity during a pandemic relative to the need for income and the level of community and individual/family disruption caused by the mitigation interventions may be major determinants of changes in public adherence.

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Planning to Minimize Consequences of Community Mitigation Strategy

Pandemic mitigation interventions will pose challenges for individuals and families, employers (both public and private), and local communities. Some cascading second- and third-order effects will arise as a consequence of the use of NPIs. However, until a pandemic-strain vaccine is widely available during a pandemic, these interventions are key measures to reduce disease transmission and protect the health of Americans. The community mitigation strategy emphasizes care in the home and underscores the need for individual, family, and employer preparedness. Adherence to these interventions will test the resiliency of individuals, families, and employers.

The major areas of concern derive from the recommendation to dismiss children from school and closure of childcare programs. The concerns include 1) the economic impact to families; 2) the potential disruption to all employers, including businesses and governmental agencies; 3) access to essential goods and services; and 4) the disruption of school-related services (e.g., school meal programs). Other interventions, such as home isolation and voluntary home quarantine of members of households with ill persons, would also contribute to increased absenteeism from work and affect both business operations and employees. These issues are of particular concern for vulnerable populations who may be disproportionately impacted.

However, these and other consequences may occur in the absence of community-wide interventions because of spontaneous action by the public or as a result of closures of schools and workplaces related to absenteeism of students and employees. These consequences associated with the pandemic mitigation interventions must be weighed against the economic and social costs of an unmitigated pandemic.

Many families already employ a number of strategies to balance childcare and work responsibilities. Pandemic mitigation interventions, especially dismissal of students from school classes and childcare programs, will be even more challenging. These efforts will require the active planning and engagement of all sectors of society.

Impact of School Closure on the Workforce

Workplace absenteeism is the primary issue underlying many of the concerns related to the pandemic mitigation strategies. Absenteeism for child minding could last as long as 12 weeks for a severe pandemic. The potential loss of personal income or employment due to absenteeism related to prolonged cancellation of school classes and the need for child minding can lead to financial insecurity, fear, and worry. Workplace absenteeism, if severe enough, could also affect employers and contribute to some workplaces reducing or closing operations (either temporarily or permanently). Depending on the employers affected, this could limit the availability of essential goods and services provided by the private sector and the government, interrupting critical business supply chains and potentially threatening the ability to sustain critical infrastructure. Workplace absenteeism and the resulting interruption of household income would test the resiliency

of all families and individuals but would be particularly challenging for vulnerable populations. The potential impact on society underscores the need for preparedness of individuals, families, businesses, organizations, government agencies, and communities. There are 300 million Americans living in 116 million households in the United States.[92] Approximately one-third of U.S. households (40 million) include children less than 18 years of age. In slightly more than half of these households (22 million), all adults present are working. Five million of these households have only a single working adult present. These households with children and only one working adult would be impacted disproportionately—potentially requiring the single working adult in the household to remain home to mind the children if students were dismissed from schools or childcare facilities were closed.

Depending upon the age threshold assumed for children requiring adult supervision, the impact of dismissing students from school and closure of childcare programs on working families would vary. The number of households impacted could range from 12.4 million (assuming children <13 years of age would require adult supervision) to 15.4 million (assuming children <15 years of age would require full-time adult supervision).

The projected impact of these estimates, however, does not fully account for the strategies families already employ to care for their children and remain in the workforce. Families with all adults in the household working currently utilize a number of strategies for child minding, including the assistance of other family members, such as grandparents and siblings, assistance from separated/divorced spouses, children minding themselves, staggered work/child-minding shifts for parents, and parents working from home. There are 60 million children under the age of 15. Over half these children (32 million or 56 percent) have a working mother. Nearly one-third (29 percent) of these children have a mother who works a non-day shift. Nearly one-third (29 percent) have a mother working part time. Nearly one-third (30 percent) of children under age 5 living with only their father in the household were regularly cared for by their mother while their father was working or in school. One of seven (14 percent) school age children, 5-14 years of age, living with only one parent in the household were regularly cared for by the other parent while their father or mother was working or attending school.[93]

The Harvard School of Public Health public opinion poll reported that 86 percent of families with children under age 5 in childcare or children 5-17 years of age would be able to arrange for childcare to allow at least one adult in the household to continue to work if classes and childcare were cancelled for 3 months.[89] These findings, when applied to the overall population, suggest that approximately one in seven households with children attending school or childcare would be unable to have at least one adult continue to work during a prolonged period of school and childcare cancellation.

Impact of Voluntary Home Isolation and Voluntary Home Quarantine

The impacts of pandemic mitigation interventions on workplace absenteeism are overlapping. In contrast to possible prolonged absenteeism for child minding, voluntary home quarantine would require all household members of an ill individual to remain home for approximately 1 week (single-person households, representing 27 percent of all U.S. households, would not be impacted by this intervention). In addition, ill individuals would stay home from work for a period of approximately 7-10 days. When estimating overall absenteeism, this hierarchy suggests first considering the impact of child minding, then illness, then quarantine. For example, if a working single parent remains home from work for 12 weeks to mind her children, workplace absenteeism is unaffected if one of her children becomes ill and the home

voluntarily quarantines itself (the adult will remain absent from the workplace for 12 weeks due to child minding). If a working adult living in a household of two or more people becomes ill and is absent due to illness, the additional impact of absenteeism related to voluntary home quarantine would only apply if there are other non-ill working adults present in the household.

Absenteeism due to illness is directly related to the rate of clinical illness in the population. The proposed community interventions attempt to reduce disease transmission and illness rates. As illness rates are reduced, absenteeism related to illness and quarantine would be expected to decline, whereas absenteeism related to child minding would remain constant.

The feasibility of following pandemic mitigation interventions is of particular concern for vulnerable populations (e.g., people who are living alone, the poor or working poor, elderly, [particularly those who are homebound], homeless, recent immigrants, disabled, institutionalized, or incarcerated). More than 31 million individuals in the United States live alone (27 percent of all households) and one-third of these individuals are age 65 years or older. According to the Harvard School of Public Health public opinion poll, 45 percent of respondents living in one-adult households report they would not have anyone to take care of them in the event of a pandemic.[90] More than four in ten respondents living in one-adult households (45 percent) and about one-third of low-income (36 percent), African-American (34 percent), disabled (33 percent), or chronically ill (32 percent) adults said they would not have anyone to take care of them if they were ill and had to remain at home. Similarly among people age 65 or over, those who live in one-adult households were far more likely (41 percent vs 15 percent) than those who lived in two-adult households with another person age 65 or over to say they would have no one to take care of them. Additionally, the millions of frail elderly individuals who require life-sustaining supports to remain in the community would need additional consideration. Planning should begin now to include solutions to address the needs of the frail elderly. Of the approximately 45 million seniors (age 65 years and older) currently in the United States, 5 percent, or 2.25 million are considered frail. Currently the Elderly Nutrition Program provides meals for approximately 3 million elderly participants, including the frail elderly, in congregate settings, or through volunteers who provide homebound seniors with home-delivered meals. Participants receive approximately half of their daily nutritional needs from those meals. In addition, other related community-based services, such as transportation and healthcare, are critical for seniors, particularly the frail elderly, who receive this assistance in order to maintain their independence.[94, 95] Communities will need to plan for how these vital supports can continue both for this population as well as for other groups with unique physical and mental challenges in light of efforts to protect lives and limit the spread of disease.

Strategies to Minimize Impact of Workplace Absenteeism

Solutions or strategies for minimizing the impact of dismissal of students from school and closure of childcare programs and workplace absenteeism may include the following: 1) employing child-minding strategies to permit continued employment; 2) employing flexible work arrangements to allow persons who are minding children or in quarantine to continue to work; 3) minimizing the impact on household income through income replacement; and 4) ensuring job security.

In contrast to the unpredictable nature of workplace absenteeism related to illness (unpredictability of who will be affected and who will be absent from work), it may be easier to forecast who is likely to be impacted by the dismissal of students from school and/or the

closure of childcare. Accordingly, early planning and preparedness by employers, communities, individuals, and families is critical to minimizing the impact of this intervention on families and businesses.

In a severe pandemic, parents would be advised to protect their children by reducing out-of-school social contacts and mixing with other children.[96] The safest arrangement would be to limit contact to immediate family members and for those family members to care for children in the home. However, if this is not feasible, families may be able to develop support systems with co-workers, friends, families, or neighbors, to meet ongoing childcare needs. For example, they could prepare a plan in which two to three families work together to supervise and provide care for a small group of infants and young children.

As was noted in the Harvard School of Public Health public opinion poll, parents reported that they would primarily depend upon family members to assist with child minding (self/family member in the home, 82 percent; children caring for themselves, 6 percent; family member outside the home, 5 percent; and combination, 5 percent). One of four households with children under age 5 in childcare or children 5-17 years of age estimated that they would be able to work from home and care for their children. Students returning home from colleges and universities may also be available to assist with child minding.[90]

More than half (57 percent) of private-sector employees have access to paid sick leave.[97] More than three-fourths (77 percent) have paid vacation leave, and 37 percent have paid personal leave. Currently, leave policies would likely not cover the extended time associated with child minding. Expanded leave policies and use of workplace flexibilities, including staggered shifts and telework, would help employees balance their work and family responsibilities during a severe pandemic. Additional options to offset the income loss for some employees meeting specific requirements include provisions for Unemployment Insurance. In addition, following a "major disaster" declaration under the Stafford Act, additional individual assistance, including Disaster Unemployment Assistance, may become available to eligible persons. The Family and Medical Leave Act may also offer protections in terms of job security for up to 12 weeks for covered and eligible employees who have a serious health condition or who are caring for a family member with a serious health condition.

In addition to employers expanding leave policies and adopting workplace flexibilities, Federal, State, local, tribal, and territorial officials should review laws, regulations, and policies to identify ways to help mitigate the economic impact of a severe pandemic and implementation of the pandemic mitigation measures on employers, individuals, and families, especially vulnerable populations. Clarity on such policies from employers and the government will help workers plan and prepare for the potential threat of a severe pandemic and to plan and comply with the pandemic mitigation intervention. Many of these programs and policies would also be applicable if no pandemic mitigation measures were in place and absences were due to personal illness or the need to care for an ill family member.

Interruption of School Meal Programs

An additional concern related to dismissal of students is the interruption of services provided by schools, including nutritional assistance through the school meal programs. This would alter the nature of services schools provide and require that essential support services, including nutritional assistance to vulnerable children, be sustained though alternative arrangements.

The National School Lunch Program operates in more than 100,000 public and non-profit private schools and residential childcare institutions [98], and the School Breakfast Program operates

in approximately 80,000 schools [99]. School lunch and breakfast are free for students at or below 130 percent of the poverty level and are available at reduced price for students between 130 percent and 185 percent poverty level. Half of the thirty million students that participate in the School Lunch Program received free meals in 2006. During the summer, a Summer Food Service Program operates at more than 30,000 sites, providing breakfast, lunch and snacks to children living in low-income areas; the program served approximately 1.9 million total students in 2005.[100]

According to the Harvard School of Public Health public opinion poll, 13 percent of households with children receiving free school meals reported that they would have a major problem if schools were closed and meals discontinued.[90] Approximately 15 million children currently receive free school meals; thus, it is anticipated that about 2 million would have a major problem associated with the interruption of school meals.

Many of these households also depend upon other Federal nutrition programs, including the Food Stamp Program, the Special Supplemental Nutrition Program for Women, Infants, and Children, and the Child and Adult Care Food Program, and community food pantries.

Strategies to Minimize the Impact of Interrupting School Meals

During a severe pandemic, it will be important for individuals and families to plan to have extra supplies on hand, as people may not be able to get to a store, stores may be out of supplies, and other services (e.g., community soup kitchens and food pantries) may be disrupted. Communities and families with school-age children who rely on school meal programs should anticipate and plan as best they can for a disruption of these services and school meal programs for up to 12 weeks.

This may be particularly challenging for families with children who already depend on a number of these programs. The Federal Government is working together with State and local emergency response planners to find creative solutions to meet nutrition assistance needs for vulnerable populations. Local government and faith-based and community leaders are being encouraged to work closely with nutrition program administrators at the local, State, and Federal level to:

- Develop plans to address community nutrition assistance needs during a pandemic
- Identify nutrition program adaptations needed to respond to social distancing, voluntary quarantines, and possible disruption of the normal food supply
- Address challenges related to the supply and delivery of food through commercial markets
- Identify current program flexibilities/ authorities and determine if others are needed

School Resources Available for Community Service

If students are dismissed from school but schools remain open, school- and education-related assets, including school buildings, school kitchens, school buses, and staff, may continue to remain operational and potentially be of value to the community in many other ways. In addition, faculty and staff may be able to continue to provide lessons and other services to students by television, radio, mail, Internet, telephone, or other media. Continued instruction is not only important for maintaining learning but also serves
as a strategy to engage students in a constructive activity during the time that they are being asked to remain at home.

Impact on Americans Living Abroad

Although this document primarily considers a domestic influenza pandemic, it provides guidance that is relevant to American organizations and individuals based abroad.

There are approximately 7 million American citizens living overseas. About 3 million of these are working abroad on behalf of more than 50 Federal agencies, although the vast majority are employees of the U.S. Department of Defense and their dependents.[101, 102] In addition, there are 194 American Overseas Schools that have students in all grades, the vast majority of whom are children of U.S. citizens working in government or for private companies and contractors. Excluding the military, approximately one-third of American households overseas have children under 18 years of age, and approximately half are households in which both parents work.[103] ("American households" in this context is defined as households in which the head of household is a U.S. citizen without dual citizenship.) The impact of pandemic mitigation measures on Americans overseas would be similar to that in the United States, except that there are very few extended family members overseas to assist in childcare should schools be closed. As a result, a decision to dismiss students from school and close childcare could result in increased workplace absenteeism. This might be partially offset by the fact that single-parent households with children are less common among Americans abroad than in the United States.

During a pandemic, security for Americans abroad could become an increased concern, particularly in those countries that are unstable or lack the capability to prevent lawlessness. In such instances, the desire to close institutions, such as schools or embassies, must be balanced against the greater protection that can be provided to American citizens who are gathered in one place, rather than distributed in their homes. Additionally, an estimated one-third (80 of 250) of U.S. diplomatic posts abroad have undependable infrastructure for water, electricity, and food availability, which may impair the ability of people to adhere to NPIs.[103]

In consideration of these factors, many Americans may wish to repatriate to the United States at the outset of a pandemic, and this should be considered in decisions to implement closure of institutions and other NPIs in the international setting.

Strategy to Reduce Impact on Americans Living Abroad

Americans abroad should review pandemic preparedness recommendations issued by the U.S. Department of State and the U.S. Department of Health and Human Services. Updated regional and country-specific information is provided on www.pandemicflu.gov, the CDC travel website (www.cdc.gov/travel/), and the U.S. Department of State's travel site (www.travel.state.gov). In addition, two million of the estimated 4.5 million non-military affiliated Americans abroad are registered with U.S. Embassies and Consulates, and are thus able to receive warnings and announcements from these diplomatic posts. Those preparing to travel overseas can register for country-specific announcements online at https://travelregistration.State.gov/ibrs/.

Americans should not assume that international transportation would be available during a pandemic. As a result, Americans abroad should identify local sources of healthcare and prepare to "shelter-in-place" if necessary. In those areas with potentially limited water and food availability, Americans living abroad are encouraged to maintain supplies of food and water to last at least two and as long as 12 weeks. Additional recommendations for preparing for a pandemic while abroad are available in the State Department fact sheet *How to Prepare for "Sheltering-In-Place,"* which is available at travel.State.gov/travel/tips/health/health_3096.html.

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Testing and Exercising Community Mitigation Interventions

Because pandemics occur rarely, drills and exercises are required to test plans and to maintain response proficiency. Such real-world operational experience could yield invaluable empirical evidence regarding how readily particular pandemic mitigation measures might be implemented and how well they might work if applied on a larger scale and/or for longer duration. Drills and exercises permit individuals and organizations to carry out their normal duties and relate to each other under unusual circumstances in simulated environments that are far less costly and threatening than real events.

Discussion-based exercises (e.g., tabletop exercises) are a first step to help identify "gaps" in the plans, policies, protocols, processes, and procedures, included in planning for pandemic mitigation interventions. Such gaps should be filled before expensive, resource-intense, operations-based drills and exercises are conducted. For example, developing community communications plans to notify the public about the status of a pandemic, what protective actions should be taken, and where to seek medical advice during a pandemic, as well as planning for distribution of antiviral medications, determining the process for dismissal of students from schools and closure of childcare facilities, and planning for possible closure of mass gatherings should be decided before conducting a full-scale exercise.

As responders practice the plan through exercising, they learn which aspects of response do not go "as planned." After the exercise, responders debrief ("hot wash") and create an after-action-report to describe corrective actions to fix response problems, including who is responsible for fixing what by when (a "corrective action plan"). Proposed solutions should be re-tested to ensure that they adequately correct the response problem.

In July 2006, CDC's Coordinating Office of Terrorism Preparedness and Emergency Response provided supplemental guidance for recipients of Federal funding through the *Public Health Preparedness and Response Cooperative Agreement* (Cooperative Agreement AA154) specifically intended to foster developing and exercising pandemic influenza plans. Specific performance measures for testing and exercising plans are listed in that guidance, which can be accessed at www.bt.cdc.gov/planning/coopagreement/pdf/phase2-panflu-guidance.pdf.

XII

Research Needs

A comprehensive research agenda for pandemic influenza is needed to improve the evidence base of the proposed NPIs described in this interim guidance. This agenda should include conducting studies to gain more knowledge of the epidemiology of influenza, the effectiveness of community-based interventions, the use of medical countermeasures that complement community interventions, the modification of existing mathematical modeling to include adverse societal consequences, and the development of new modeling frameworks to assess the effectiveness of interventions.[6, 13, 14, 19, 20, 104-108] Research to clarify or expand upon these issues may be necessary during a pandemic outbreak. Thus, planning for accelerated Institutional Review Board approval in the setting of a pandemic may facilitate important research conducted in hospitals, public health departments, and universities.

Key areas for further research include the following:

- *Enhancing epidemiologic and laboratory surveillance systems for influenza:* Existing influenza surveillance systems have gaps in timeliness and completeness that will hamper adequate functioning during a pandemic. A high priority must be given to the development of more timely surveillance for laboratory-confirmed cases of human infections with novel influenza A viruses, methods to rapidly estimate the excess mortality rate during a pandemic, better use of existing electronic data sources, and the development of platforms that can be used to assess the effectiveness of pandemic interventions, including vaccines, antiviral medications, and NPIs.
- *Development of rapid diagnostics:* The development of sensitive and specific point-of-care rapid tests for influenza A subtypes with pandemic potential may play an important role in pandemic preparedness. Laboratory diagnosis of influenza is critical for treatment, prophylaxis, surveillance, vaccine development and efficacy, and the timing of the initiation of pandemic mitigation strategies.
- *Measurement of effectiveness of personal protective equipment (PPE, e.g., surgical masks and respirators) in community settings:* Quantification of the effectiveness of PPE for infection prevention, the ability of community members to correctly use PPE, the relative benefit of fit-testing for respirator-use in community settings, the utility of PPE for children and the elderly for whom PPE is not currently designed, and the relative contribution of PPE to safety in the context of other NPIs should be undertaken.
- *Determination of the trigger points for implementation of NPIs:* Infection with influenza results in annual community-based epidemics. While the historic data from 1918 on use of NPIs indicate an ecological relationship between timing and effectiveness, additional prospective data on timing of each of these measures will usefully complement the value of historic evidence. Studies of some of the NPIs can be conducted during sporadic outbreaks of seasonal influenza.

- *Determination of markers to signal that it might be appropriate to end or lift pandemic mitigation interventions:* Pandemic mitigation measures may be employed in communities until sufficient vaccine is available to that population or until other parameters are reached. Retrospective and other studies could provide detailed information regarding these predictive factors.
- *Advancing the knowledge base on pharmaceutical interventions:* Antiviral medications and vaccines are integral components of pandemic mitigation strategies. Availability and use of medications can complement the effectiveness of voluntary isolation and quarantine and enhance compliance within communities. Therefore, the capacity to rapidly obtain data on antiviral and vaccine effectiveness, the development of resistance, and the assessment of distribution dynamics is important to successful implementation of pandemic mitigation strategies.
- *Determination, through prospective field studies, of the effectiveness of interventions required to achieve reduced transmission:* The evidence base for most of the interventions currently suggested for use is based on historic reviews, common sense, and biological plausibility. Evidence should be obtained through prospective trials or observational studies conducted during seasonal influenza outbreaks. Given the socioeconomic ramifications of pandemic mitigation interventions such as social distancing measures for children and adults, adherence with prolonged use of interventions is likely to be limited. Therefore, in addition to the assessment of effectiveness, studies should also be done to assess factors that promote compliance and the optimal duration of interventions.
- *Improved understanding of fundamental questions of influenza transmission and epidemiology:* Prospective epidemiological studies to address gaps in understanding of influenza epidemiology and transmission and the natural history of disease may guide the application of NPIs in the community.
- *Improved understanding of environmental factors that may influence influenza survival and transmissibility:* Studies to elucidate the impact of temperature, humidity, radiation, seasonality, and other factors and their relation to influenza transmission in communities are needed to identify complementary mitigation interventions.
- *Improved measures of uncertainty with regard to parameter and model estimates for mathematical modeling of NPIs:* Development of improved metrics of uncertainty around interpretation of modeling outputs may more appropriately guide the incorporation of modeling results into development of policy for community use of these measures.
- *Characterize and determine the potential psychosocial sequelae of voluntary home quarantine and social distancing strategies:* Investigation of the use of home quarantine and social distancing strategies in simulations and in severe seasonal influenza outbreaks could determine key issues that might arise during a severe pandemic requiring long-term social distancing strategies and might suggest possible strategies to reduce untoward effects. Studies that focus on incidences of school closure that might be used for other disease outbreaks might help to better understand facilitators and barriers to adherence with public health recommendations.
- *Expanded parameter inputs for modeling the potential effectiveness of school and workplace interventions in mitigating an influenza pandemic:* The current mathematical models have been prepared with a single option for each of the interventions. For example, the recommendation for dismissing students from schools is absolute and does not include options to partially implement

this intervention. Given the societal consequences of this protective intervention, as well as other measures, it is recommended that models be further developed to study a broader range of options for each intervention.

- *Appropriate modeling of effect of interventions to limit the impact of cascading second- and third-order consequences of the use of NPIs:* The implementation challenges and cascading consequences of both the pandemic and of the interventions should be considered in the mathematical models. For example, broader outcome measures beyond influenza-related public health outcomes might include costs and benefits of intervention strategies.
- *Development of process indicators:* Given the need to assess community-level response capacity in any Incident of National Significance, a research agenda related to mitigation of pandemic influenza should include development of tools to assess ongoing response capacity. These tools may include ways to assess adherence with interventions and to determine factors that influence adherence fatigue. Such tools would be most useful for the implementing jurisdictions in development of preparedness plans and for evaluating the implementation dynamics during a pandemic.

XIII

Conclusions

The goals of planning for an influenza pandemic are to save lives and to reduce adverse personal, social, and economic consequences of a pandemic; however, it is recognized that even the best plans may not completely protect everyone. Such planning must be done at the individual, local, tribal, State, Federal, and international levels, as well as by businesses and employers and other organizations, in a coordinated manner. Interventions intended for mitigating a pandemic pose challenges for individuals and families, employers (both public and private), schools, childcare programs, colleges and universities, and local communities. Pre-pandemic, scenario-based planning offers an opportunity to better understand and weigh the benefits of possible interventions as well as identify strategies to maximize the number of people protected while reducing, to the greatest extent possible, the adverse social, logistical, and economic effects of proposed interventions.

The early use of combinations of NPIs that are strategically targeted, layered, and implemented in a coordinated manner across neighboring jurisdictions and tailored to the severity of the pandemic is a critical component of a comprehensive strategy to reduce community disease transmission and mitigate illness and death. This guidance introduces, for the first time, a Pandemic Severity Index in which case fatality ratio serves as the critical driver for categorizing the severity of a pandemic. The severity index is designed to enable better forecasting of the impact of a pandemic and allows for fine-tuning the selection of the most appropriate tools and interventions, balancing the potential benefits against the expected costs and risks. Decision-makers may find the Pandemic Severity Index useful in a wide range of pandemic planning scenarios beyond pandemic mitigation, including, for example, in plans for assessing the role for pre-pandemic vaccine or estimating medical ventilator supply and other healthcare surge requirements.

This planning guidance should be viewed as the first iteration of a dynamic process that will be revisited and refined on a regular basis and informed by new knowledge gained from research, exercises, and practical experience. The array of public health measures available for pandemic mitigation is also evolving, and future versions of this document will need to incorporate the changing landscape. Some critical priority issues for inclusion in subsequent drafts are highlighted in actions being pursued under the National Implementation Plan Action Items. These include the role and further development of point-of-care rapid influenza diagnostics, antiviral medications, pre-pandemic vaccines, face mask and respirator use in community settings, and home-care infection control management strategies. The development of sensitive and specific diagnostic tests for pandemic strains not only enables a more efficient use of antiviral medication for treatment and prophylaxis but also helps minimize the need for isolation and quarantine for persons with nonspecific respiratory infections. The increasing availability of antiviral medications will prompt new discussions about the role of antiviral prophylaxis for households and workers in critical infrastructure to further reduce

transmission potential and to provide incentives to comply with voluntary home quarantine recommendations and for healthcare and other workers to report to work. Changes in the technology and availability of personal protective equipment will influence guidance on community use of face masks and respirators. Guidance for safe management of ill family members in the household should serve to decrease the risk of household transmission of influenza, once again aligning incentives for compliance and increasing the effectiveness of pandemic mitigation interventions.

Planning and preparedness for implementing pandemic mitigation strategies is complex and requires participation by all levels of government and all segments of society. Pandemic mitigation strategies call for specific actions by individuals, families, businesses and employers, and organizations. Building a foundation of community and individual and family preparedness and developing and delivering effective risk communication for the public in advance of a pandemic is critical. If embraced earnestly, these efforts will result in enhanced ability to respond not only to pandemic influenza but also to multiple hazards and threats. While the challenge is formidable, the consequences of facing a severe pandemic unprepared will be intolerable. This interim pre-pandemic planning guidance is put forth as a step in our commitment to address the challenge of mitigating a pandemic by building and enhancing community resiliency.

XIV

References

1. Institute of Medicine; Committee on Modeling Community Containment for Pandemic Influenza. Modeling Community Containment for Pandemic Influenza. A Letter Report. Washington D.C.: The NationalAcademies Press; 2006. p.1.

2. U.S. Homeland Security Council. National Strategy for Pandemic Influenza Implementation Plan. 2006 [cited 2007 January 23]; Available from: www.whitehouse.gov/homeland/nspi_implementation.pdf

3. Gostin L. Public health strategies for pandemic influenza: ethics and the law. JAMA. 2006 Apr 12;295(14):1700-4.

4. Institute of Medicine. The Threat of Pandemic Influenza: Are We Ready? Washington, D.C.: The National Academies Press; 2004.

5. Gerberding JL. Pandemic Preparedness: Pigs, Poultry, and People versus Plans, Products, and Practice. J Infect Dis. 2006 Nov 1;194 Suppl 2:S77-81.

6. Fauci AS. Seasonal and pandemic influenza preparedness: science and countermeasures. J Infect Dis. 2006 Nov 1;194 Suppl 2:S73-6.

7. Monto AS. The threat of an avian influenza pandemic. N Engl J Med. 2005 Jan 27;352(4):323-5.

8. Monto AS. The threat of an avian influenza pandemic. N Engl J Med. 2005 Mar 10;352(10):1056.

9. U.S. Department of Health and Human Services. HHS Pandemic Influenza Plan. 2005 [cited 2007 January 23]; Available from: www.hhs.gov/pandemicflu/plan/

10. Meltzer MI, Cox NJ, Fukuda K. The economic impact of pandemic influenza in the United States: priorities for intervention. Emerg Infect Dis. 1999 Sep-Oct;5(5):659-71.

11. U.S. Congress. Congressional Budget Office. A potential influenza pandemic: possible macroeconomic effects and policy issues. 2005. p.10 [cited 2007 January 23]; Available from: www.cbo.gov/ftpdocs/69xx/doc6946/12-08-BirdFlu.pdf

12. Toner E, Waldhorn R, Maldin B, Borio L, Nuzzo JB, Lam C, et al. Hospital preparedness for pandemic influenza. Biosecur Bioterror. 2006;4(2):207-17.

13. Inglesby TV, Nuzzo JB, O'Toole T, et al. Disease mitigation measures in the control of pandemic influenza. Biosecur Bioterror. 2006;41:1-10.

14. Fauci AS. Pandemic influenza threat and preparedness. Emerg Infect Dis. 2006 Jan;12(1):73-7.

15. Enserink M. Avian influenza. 'Pandemic vaccine' appears to protect only at high doses. Science. 2005 Aug 12;309(5737):996.

16. Fedson DS. Preparing for pandemic vaccination: an international policy agenda for vaccine development. J Public Health Policy. 2005 Apr;26(1):4-29.

17. Fauci AS. Race against time. Nature. 2005 May 26;435(7041):423-4.

18. Kilbourne ED, Smith C, Brett I, Pokorny BA, Johansson B, Cox N. The total influenza vaccine failure of 1947 revisited: major intrasubtypic antigenic change can explain failure of vaccine in a post-World War II epidemic. Proc Natl Acad Sci U S A. 2002 Aug 6;99(16):10748-52.

19. Osterholm MT. Preparing for the next pandemic. N Engl J Med. 2005 May 5;352(18):1839-42.

20. Institute of Medicine; Committee on Modeling Community Containment for Pandemic Influenza. Modeling Community Containment for Pandemic Influenza. A Letter Report. Washington D.C.: The NationalAcademies Press; 2006.

21. Crosby AW. America's Forgotten Pandemic: The Influenza of 1918. Second ed. Cambridge: Cambridge University Press; 2003.

22. Kilbourne ED. Influenza pandemics of the 20th century. Emerg Infect Dis. 2006 Jan;12(1):9-14.

23. Barry JM. The Great Influenza: The Epic Story of the Deadliest Plague in History. New York: Viking; 2004.

24. Taubenberger JK, Morens DM. 1918 Influenza: the mother of all pandemics. Emerg Infect Dis. 2006 Jan;12(1):15-22.

25. Cox NJ, Subbarao K. Global epidemiology of influenza: past and present. Annu Rev Med. 2000;51:407-21.

26. Frost WH. The epidemiology of influenza. 1919. Public Health Rep. 2006;121 Suppl 1:149-59; discussion 8.

27. Chin TD, Foley JF, Doto IL, Gravelle CR, Weston J. Morbidity and mortality characteristics of Asian strain influenza. Public Health Rep. 1960 Feb;75:148-58.

28. Ferguson NM, Cummings DA, Fraser C, Cajka JC, Cooley PC, Burke DS. Strategies for mitigating an influenza pandemic. Nature. 2006 Jul 27;442(7101):448-52.

29. Germann TC, Kadau K, Longini IM, Jr., Macken CA. Mitigation strategies for pandemic influenza in the United States. Proc Natl Acad Sci U S A. 2006 Apr 11;103(15):5935-40.

30. Glass RJ. Targeted social distancing design for pandemic influenza. Emerg Infect Dis. 2006;12:1671-81.

31. Longini IM, Jr., Nizam A, Xu S, Ungchusak K, Hanshaoworakul W, Cummings DA, et al. Containing pandemic influenza at the source. Science. 2005 Aug 12;309(5737):1083-7.

32. Longini IM, Jr., Halloran ME, Nizam A, Yang Y. Containing pandemic influenza with antiviral agents. Am J Epidemiol. 2004 Apr 1;159(7):623-33.

33. Bell DM. Non-pharmaceutical interventions for pandemic influenza, national and community measures. Emerg Infect Dis. 2006 Jan;12(1):88-94.

34. U.S. Congress. Congressional Budget Office. A potential influenza pandemic: possible macroeconomic effects and policy issues. 2005 [cited 2007 January 23]; Available from: www.cbo.gov/ftpdocs/69xx/doc6946/12-08-BirdFlu.pdf

35. World Health Organization. WHO global influenza preparedness plan. The role of WHO and recommendations for national measures before and during pandemics. 2005 [cited 2007 January 23]; Available from: www.who.int/csr/resources/publications/influenza/who_cds_csr_gip_2005_5.pdf

36. Ball F, Britton T, Lyne O. Stochastic multitype epidemics in a community of households: estimation of threshold parameter R_0 and secure vaccination coverage. Biometrika. 2004;91:345-62.

37. Heesterbeek JA. A brief history of R0 and a recipe for its calculation. Acta Biotheor. 2002;50(3):189-204.

38. Sanchez MA, Blower SM. Uncertainty and sensitivity analysis of the basic reproductive rate. Tuberculosis as an example. Am J Epidemiol. 1997 Jun 15;145(12):1127-37.

39. Lewis B. Simulated Pandemic Influenza Outbreaks in Chicago. Technical Report: Virginia Bioinformatics Institute at Virginia Tech; 2006. Report No.: NDSSL-TR-06-023.

40. Eubank S. Network based models of infectious disease spread. Jpn J Infect Dis. 2005 Dec;58(6):S9-13.

41. Cox NJ, Subbarao K. Influenza. Lancet. 1999 Oct 9;354(9186):1277-82.

42. Yuen KY, Chan PK, Peiris M, Tsang DN, Que TL, Shortridge KF, et al. Clinical features and rapid viral diagnosis of human disease associated with avian influenza A H5N1 virus. Lancet. 1998 Feb 14;351(9101):467-71.

43. Welliver R, Monto AS, Carewicz O, Schatteman E, Hassman M, Hedrick J, et al. Effectiveness of oseltamivir in preventing influenza in household contacts: a randomized controlled trial. JAMA. 2001 Feb 14;285(6):748-54.

44. Halloran ME, Hayden FG, Yang Y, Longini IM, Jr., Monto AS. Antiviral Effects on Influenza Viral Transmission and Pathogenicity: Observations from Household-based Trials. Am J Epidemiol. 2007 Jan 15;165(2):212-21.

45. Hayden FG, Belshe R, Villanueva C, Lanno R, Hughes C, Small I, et al. Management of influenza in households: a prospective, randomized comparison of oseltamivir treatment with or without postexposure prophylaxis. J Infect Dis. 2004 Feb 1;189(3):440-9.

46. Hayden FG, Gubareva LV, Monto AS, Klein TC, Elliot MJ, Hammond JM, et al. Inhaled zanamivir for the prevention of influenza in families. Zanamivir Family Study Group. N Engl J Med. 2000 Nov 2;343(18):1282-9.

47. Monto AS, Pichichero ME, Blanckenberg SJ, Ruuskanen O, Cooper C, Fleming DM, et al. Zanamivir prophylaxis: an effective strategy for the prevention of influenza types A and B within households. J Infect Dis. 2002 Dec 1;186(11):1582-8.

48. Hayden FG, Pavia AT. Antiviral management of seasonal and pandemic influenza. J Infect Dis. 2006 Nov 1;194 Suppl 2:S119-26.

49. Balicer RD, Huerta M, Davidovitch N, Grotto I. Cost-benefit of stockpiling drugs for influenza pandemic. Emerg Infect Dis. 2005 Aug;11(8):1280-2.

50. Longini IM, Jr., Koopman JS, Haber M, Cotsonis GA. Statistical inference for infectious diseases. Risk-specific household and community transmission parameters. Am J Epidemiol. 1988 Oct;128(4):845-59.

51. Institute of Medicine; Committee on Modeling Community Containment for Pandemic Influenza. Modeling Community Containment for Pandemic Influenza. A Letter Report. Washington D.C.: The NationalAcademies Press; 2006. p.25.

52. Lipsitch M, Cohen T, Murray M, et al. Antiviral resistance and the control of pandemic influenza. PLoS Medicine. 2007;4:e15.

53. Olsen SJ, Ungchusak K, Sovann L, Uyeki TM, Dowell SF, Cox NJ, et al. Family clustering of avian influenza A (H5N1). Emerg Infect Dis. 2005 Nov;11(11):1799-801.

54. Watts DJ, Strogatz SH. Collective dynamics of'small-world' networks. Nature. 1998 Jun 4;393(6684):440-2.

55. Newman ME, Park J. Why social networks are different from other types of networks. Phys Rev E Stat Nonlin Soft Matter Phys. 2003 Sep;68(3 Pt 2):036122.

56. Heymann A, Chodick G, Reichman B, Kokia E, Laufer J. Influence of school closure on the incidence of viral respiratory diseases among children and on health care utilization. Pediatr Infect Dis J. 2004 Jul;23(7):675-7.

57. Markel H. When Germs Travel: Six Epidemics That Invaded America Since 1900 and the Fears They Unleashed. New York: Pantheon/Random House; 2004.

58. Palla G, Derenyi I, Farkas I, Vicsek T. Uncovering the overlapping community structure of complex networks in nature and society. Nature. 2005 Jun 9;435(7043):814-8.

59. Lloyd-Smith JO, Galvani AP, Getz WM. Curtailing transmission of severe acute respiratory syndrome within a community and its hospital. Proc Royal Soc Biol Sci. 2003 Oct 7;270(1528):1979-89.

60. US General Services Administration. Childcare Center Design Guide, PBS-100. 2003 [cited 2007 January 23]; Available from: www.gsa.gov/gsa/cm_attachments/GSA_DOCUMENT/Design%20Guide_R2FD38_0Z5RDZ-i34K-pR.pdf

61. U.S. Department of Health and Human Services; Administration for Children and Families. Head Start Design Guide. Chapter 5: Planning Space and Location. 2005 [cited; 2007 January 23:[Available from: www.headstartinfo.org/publications/hs_design_guide/chapter5.htm

62. Tanner CK. Minimum Classroom Size and Number of Students Per Classroom. 2000 [cited 2007 January 23]; Available from: www.coe.uga.edu/sdpl/research/territoriality.html

63. U.S. Department of Energy. Lawrence Berkeley National Laboratory, Commercial Heating and Cooling Loads Component Analysis, June 1998, Table 14. p.35. 2006 [cited 2007 January 23]; Available from: buildingsdatabook.eren.doe.gov/docs/7.4.5.pdf

64. U.S. Department of Energy. Lawrence Berkeley National Laboratory, Commercial Heating and Cooling Loads Component Analysis, June 1998, Table 10. p.31. 2006 [cited 2007 January 23]; Available from: buildingsdatabook.eren.doe.gov/docs/7.4.2.pdf

65. U.S. Department of Energy. Lawrence Berkeley National Laboratory, Commercial Heating and Cooling Loads Component Analysis, June 1998, Table 11. p.32. 2006 [cited 2007 January 23]; Available from: buildingsdatabook.eren.doe.gov/docs/7.4.4.pdf

66. U.S. Department of Commerce; Census Bureau; Housing and Household Economic Statistics Division. American Housing Survey for the United States, 2003. 2005 [cited 2007 January 23]; Available from: www.census.gov/hhes/www/housing/ahs/ahs03/tab23.htm

67. American Public Transportation Association. National Service and Operating Data. 2006. p.13 [cited 2007 January 23]; Available from: www.apta.com/research/stats/factbook/documents/passengers.pdf

68. American Public Transportation Association. National Service and Operating Data. 2006. p.11 [cited 2007 January 23]; Available from: www.apta.com/research/stats/factbook/documents/passengers.pdf

69. School Transportation News. K-12 Enrollment/ Transportation Data, 2004-05 School Year. 2005 [cited 2007 January 23]; Available from: www.stnonline.com/stn/data_statistics/2004-05_schoolyear.htm

70. Principi N, Esposito S, Marchisio P, Gasparini R, Crovari P. Socioeconomic impact of influenza on healthy children and their families. Pediatr Infect Dis J. 2003 Oct;22(10 Suppl):S207-10.

71. Viboud C, Boelle PY, Cauchemez S, Lavenu A, Valleron AJ, Flahault A, et al. Risk factors of influenza transmission in households. Br J Gen Pract. 2004 Sep;54(506):684-9.

72. Brownstein JS, Kleinman KP, Mandl KD. Identifying pediatric age groups for influenza vaccination using a real-time regional surveillance system. Am J Epidemiol. 2005 Oct 1;162(7):686-93.

73. Becker NG, Dietz K. The effect of household distribution on transmission and control of highly infectious diseases. Math Biosci. 1995 Jun;127(2):207-19.

74. Becker NG, Hall R. Immunization levels for preventing epidemics in a community of households made up of individuals of various types. . Math Biosci. 1996;132(2):205-16.

75. Davis LE, Caldwell GG, Lynch RE, Bailey RE, Chin TD. Hong Kong influenza: the epidemiologic features of a high school family study analyzed and compared with a similar study during the 1957 Asian influenza epidemic. Am J Epidemiol. 1970 Oct;92(4):240-7.

76. Longini IM, Jr., Koopman JS, Monto AS, Fox JP. Estimating household and community transmission parameters for influenza. Am J Epidemiol. 1982 May;115(5):736-51.

77. King JC, Jr., Stoddard JJ, Gaglani MJ, Moore KA, Magder L, McClure E, et al. Effectiveness of school-based influenza vaccination. N Engl J Med. 2006 Dec 14;355(24):2523-32.

78. Paladini M. Do school holidays influence influenza related visits to the emergency department? (personal communication). 2007.

79. Kahn LH. Pandemic influenza school closure policies [letter]. Emerg Infect Dis. 2007;13(2):344.

80. Institute of Medicine; Committee on Modeling Community Containment for Pandemic Influenza. Modeling Community Containment for Pandemic Influenza. A Letter Report. Washington D.C.: The NationalAcademies Press; 2006. p.16.

81. Markel H, Lippman H. (personal communication). 2007.

82. Thompson WW, Comanor L, Shay DK. Epidemiology of seasonal influenza: use of surveillance data and statistical models to estimate the burden of disease. J Infect Dis. 2006 Nov 1;194 Suppl 2:S82-91.

83. Markel H. QUARANTINE! East European Jewish Immigrants and the New York City Epidemic of 1892. Baltimore: Johns Hopkins University Press; 1997.

84. Cetron M, Landwirth J. Public health and ethical considerations in planning for quarantine. Yale J Biol Med. 2005 Oct;78(5):329-34.

85. Bradley RH. Child care and common communicable illnesses in children aged 37 to 54 months. Arch Pediatr Adolesc Med. 2003 Feb;157(2):196-200.

86. U.S. Department of Commerce; U.S. Census Bureau. School Enrollment – Social and Economic Characteristics of Students: October 2003.[cited 2007 January 23] Available from: www.census.gov/prod/2005pubs/p20-554.pdf

87. U.S. Department of Education; National Center for Education Statistics. Student Financing of Undergraduate Education: 2003-04. 2006 [cited 2007 January 23]; Available from: nces.ed.gov/pubs2006/2006186.pdf

88. Centers for Disease Control and Prevention. 121 Cities Mortality Reporting System. 2006 [cited 2007 January 23]; Available from: www.cdc.gov/EPO/DPHSI/121hist.htm

89. Harvard School of Public Health. Pandemic Influenza and the Public; Survey Findings (press release). 2006 [cited 2007 January 23]; Available from: www.hsph.harvard.edu/press/releases/press10262006.html

90. Blendon RJ, Benson JM, Weldon KJ, et al. Pandemic Influenza and the Public; Survey Findings. 2006 [cited 2007 January 23]; Available from: www.hsph.harvard.edu/panflu/IOM_Avian_flu.ppt

91. The Public Engagement Project on Community Control Measures for Pandemic Influenza. 2006 [cited 2007 January 23]; Available from: www.keystone.org/Public_Policy/pandemic_control.html

92. U.S. Department of Labor; Office of the Assistant Secretary for Policy. Calculations from Current Population Survey (microdata). Washington, D.C.: U.S. Department of Labor; 2006.

93. U.S. Department of Commerce; U.S.Census Bureau. Who's Minding the Kids? Child Care Arrangements: Winter 2002. P70-101. 2005 [cited 2007 January 23]; Available from: www.census.gov/prod/2005pubs/p70-101.pdf

94. Helpguide. Aging Issues. 2004 [cited 2007 January 23]; Available from: www.helpguide.org/elder_care.htm

95. U.S. Department of Health and Human Services; Administraion on Aging. Elderly Nutrition Program. 2003 [cited 2007 January 23]; Available from: www.aoa.gov/press/fact/pdf/fs_nutrition.pdf

96. Johnson A. 2007 (personal communication).

97. U.S. Department of Labor; Bureau of Labor Statistics. National Compensation Survey: Employee Benefits in the United States, March 2006. 2006 [cited 2007 January 23]; Available from: www.bls.gov/ncs/ebs/sp/ebsmodo4.pdf

98. U.S. Department of Agriculture; Food and Nutrition Service. National School Lunch Program. 2006 [cited 2007 January 23]; Available from: www.fns.usda.gov/cnd/lunch/aboutlunch/NSLPFactSheet.pdf

99. U.S. Department of Agriculture; Food and Nutrition Service. The School Breakfast Program. 2006 [cited 2007 January 23]; Available from: www.fns.usda.gov/cnd/breakfast/aboutbreakfast/sbpfactsheet.pdf

100. U.S. Department of Agriculture; Food and Nutrition Service. Child Nutrition Tables. National Summer Food Service Program. 2006 [cited 2007 January 23]; Available from: www.fns.usda.gov/pd/sfsummar.htm

101. Bernier-Toth M. U.S. Department of State (personal communication) 2007.

102. LTC Hachey W. U.S. Department of Defense (personal communication). 2007.

103. Triplett J. U.S. Department of State (personal communication). 2007.

104. Stohr K. Avian influenza and pandemics--research needs and opportunities. N Engl J Med. 2005 Jan 27;352(4):405-7.

105. Glezen WP. Emerging infections: pandemic influenza. Epidemiol Rev. 1996;18(1):64-76.

106. Hufnagel L, Brockmann D, Geisel T. Forecast and control of epidemics in a globalized world. Proc Natl Acad Sci U S A. 2004 Oct 19;101(42):15124-9.

107. Kilbourne ED. Influenza pandemics: can we prepare for the unpredictable? Viral Immunol. 2004;17(3): 350-7.

108. Petric M, Comanor L, Petti CA. Role of the Laboratory in Diagnosis of Influenza during Seasonal Epidemics and Potential Pandemics. J Infect Dis. 2006 Nov 1;194 Suppl 2:S98-S110.

XV

Appendices

Appendix 1 – Glossary of Terms

Absenteeism rate: Proportion of employed persons absent from work at a given point in time or over a defined period of time.

Antiviral medications: Medications presumed to be effective against potential pandemic influenza virus strains and which may prove useful for treatment of influenza-infected persons or for prophylactic treatment of persons exposed to influenza to prevent them from becoming ill. These antiviral medications include the neuraminidase inhibitors oseltamivir (Tamiflu®) and zanamivir (Relenza®).

Case fatality ratio: Proportion of deaths among clinically ill persons.

Childcare: Childcare programs discussed in this guidance include 1) centers or facilities that provide care to any number of children in a nonresidential setting, 2) large family childcare homes that provide care for seven or more children in the home of the provider, and 3) small family childcare homes that provide care to six or fewer children in the home of the provider.

Children: In this document children are defined as 17 years of age or younger unless an age is specified or 12 years of age or younger if teenagers are specified.

Clinically ill: Those persons who are infected with pandemic influenza and show signs and symptoms of illness.

Colleges: Post-high school educational institutions (i.e., beyond 12th grade).

Community mitigation strategy: A strategy for the implementation at the community level of interventions designed to slow or limit the transmission of a pandemic virus.

Cough etiquette: Covering the mouth and nose while coughing or sneezing; using tissues and disposing in no-touch receptacles; and washing of hands often to avoid spreading an infection to others.

Countermeasures: Refers to pre-pandemic and pandemic influenza vaccine and antiviral medications.

Critical infrastructure: Systems and assets, whether physical or virtual, so vital to the United States that the incapacitation or destruction of such systems and assets would have a debilitating impact on national security, economy, or public health and/or safety, either alone or in any combination. Specifically, it refers to the critical infrastructure sectors identified in Homeland Security Presidential Directive 7 (HSPD-7).

Early, targeted, and layered nonpharmaceutical interventions (NPIs) strategy: A strategy for using combinations of selected community-level NPIs implemented early and consistently to slow or limit community transmission of a pandemic virus.

Excess rate: Rate of an outcome (e.g., deaths, hospitalizations) during a pandemic above the rate that occurs normally in the absence of a pandemic. It may be calculated as a ratio over baseline or by subtracting the baseline rate from the total rate.

Face mask: Disposable surgical or procedure mask covering the nose and mouth of the wearer and designed to prevent the transmission of large respiratory droplets that may contain infectious material.

Faith-based organization: Any organization that has a faith-inspired interest.

Generation time: Average number of days taken for an ill person to transmit the infection to another person.

Hand hygiene: Hand washing with either plain soap or antimicrobial soap and water or use of alcohol-based products (gels, rinses, foams containing an emollient) that do not require the use of water.

Illness rate or clinical attack rate: Proportion of people in a community who develop illness (symptomatic cases ÷ population size).

Incident of National Significance: Designation is based on criteria established in Homeland Security Presidential Directive 5 and include events with actual or potential high-impact that requires a coordinated and effective response by Federal, State, local, tribal, nongovernmental, and/or private sector entities in order to save lives, minimize damage, and provide the basis for long-term community recovery and mitigation activities.

Incubation period: The interval (in hours, days, or weeks) between the initial, effective exposure to an infectious organism and the first appearance of symptoms of the infection.

Infection control: Hygiene and protective measures to reduce the risk of transmission of an infectious agent from an infected person to uninfected persons (e.g., hand hygiene, cough etiquette, use of personal protective equipment, such as face masks and respirators, and disinfection).

Influenza pandemic: A worldwide epidemic caused by the emergence of a new or novel influenza strain to which humans have little or no immunity and which develops the ability to infect and be transmitted efficiently for a sustained period of time in the community between humans.

Isolation of ill people: Separation or restriction of movement of persons ill with an infectious disease in order to prevent transmission to others.

Mortality rate: Number of deaths in a community divided by population size of community over a specific period of time (e.g., 20 deaths per 100,000 persons per week).

Nonpharmaceutical intervention (NPI): Mitigation measure implemented to reduce the spread of an infectious disease (e.g., pandemic influenza) but one that does not include pharmaceutical products, such as vaccines and medicines. Examples include social distancing and infection control measures.

Pandemic vaccine: Vaccine for a specific influenza virus strain that has evolved the capacity for sustained and efficient human-to-human transmission. This vaccine can only be developed once the pandemic strain emerges.

Personal protective equipment (PPE): PPE is any type of clothing, equipment, or respiratory protection device (respirators) used to protect workers against hazards they encounter while doing their jobs. PPE can include protection for eyes, face, head, torso, and extremities. Gowns, face shields, gloves, face masks, and respirators

are examples of PPE commonly used within healthcare facilities. When PPE is used in a workplace setting to protect workers against workplace hazards, its use must be consistent with regulations issued by the Occupational Safety and Health Administration (www.osha.gov/index.html).

Post-exposure prophylaxis: The use of antiviral medications in individuals exposed to others with influenza to prevent disease transmission.

Pre-pandemic vaccine: Vaccine against strains of influenza virus in animals that have caused isolated infections in humans and which may have pandemic potential. This vaccine is prepared prior to the emergence of a pandemic strain and may be a good or poor match (and hence of greater or lesser protection) for the pandemic strain that ultimately emerges.

Prophylaxis: Prevention of disease or of a process that can lead to disease. With respect to pandemic influenza, this specifically refers to the administration of antiviral medications to healthy individuals for the prevention of influenza.

Quarantine: A restraint upon the activities or communication (e.g., physical separation or restriction of movement within the community/work setting) of an individual(s) who has been exposed to an infection but is not yet ill to prevent the spread of disease; quarantine may be applied voluntarily (preferred) or on compulsory basis dependent on legal authority.

Rapid diagnostic test: Medical test for rapidly confirming the presence of infection with a specific influenza strain.

Recrudescence: Reappearance of a disease after it has diminished or disappeared.

R_0 ("reproductive number"): Average number of infections resulting from a single case in a fully susceptible population without interventions. R_t: the reproductive number at a given time, t.

Schools: Refers to public and private elementary, middle, secondary, and post-secondary schools (colleges and universities).

Schools (K-12): Refers to schools, both public and private, spanning the grades kindergarten through 12th grade (elementary through high school).

Seasonal influenza: Influenza virus infections in familiar annual patterns.

Second- and third-order consequences: Chains of effects that may arise as a consequence of intervention and which may require additional planning and intervention to mitigate. These terms generally refer to foreseeable unintended consequences of intervention. For example, dismissal of students from schools may lead to workplace absenteeism for child minding. Subsequent workplace closings due to high absenteeism may lead to loss of income for employees, a third-order effect that could be detrimental to families living at or near subsistence levels.

Sector: A subdivision (sociological, economic, or political) of society.

Social distancing: Measures to increase the space between people and decrease the frequency of contact among people.

Surge capacity: Refers to the ability to expand provision of services beyond normal capacity to meet transient increases in demand. Surge capacity within a medical context includes the ability of healthcare or laboratory facilities to provide care or services above their usual capacity and to expand manufacturing capacity of essential medical materiel (e.g., vaccine) to meet increased demand.

Surgical mask: Disposable face mask that covers the mouth and nose and comes in two basic types. The first type is affixed to the head with two ties and typically has a flexible adjustment for the nose bridge. This type of surgical mask may be flat/pleated or duck-billed in shape. The second type of surgical mask is pre-molded, or cup shaped, and adheres to the head with a single elastic strap and usually has a flexible adjustment for the nose bridge. Surgical masks are used to prevent the transmission of large particles.

Telework: Refers to activity of working away from the usual workplace (often at home) through telecommunication or other remote access means (e.g., computer, telephone, cellular phone, fax machine).

Universities: Educational institutions beyond 12th grade (post high school).

Viral shedding: Discharge of virus from an infected person.

Virulence: The ability of the pathogen to produce disease; or the factors associated with the pathogen to affect the severity of diseases in the host.

Voluntary: Acting or done of one's own free will without legal compulsion (e.g., voluntary household quarantine).

Appendix 2 – Interim Guidance Development Process

This guidance document was developed through a collaborative process that gathered input from a variety of sources, including subject-matter experts, peer-reviewed scientific literature, current research, and stakeholders (i.e., Federal agencies, public health officials, and the public). A working group composed of Federal, State, and local public health officials and representatives from the Association of State and Territorial Health Officials (ASTHO), the Council of State and Territorial Epidemiologists (CSTE), the National Association of County and City Health Officials (NACCHO), the Infectious Disease Society of America (IDSA), and the National Association of Local Boards of Health (NALBOH) met periodically to review and evaluate evidence derived from the following sources:

- Preliminary statistical analyses of historical data on the implementation of selected NPIs in U.S. cities during the 1918 pandemic.
- Stakeholder input from interagency outreach meetings with public health, private sector, labor unions, faith-based and community partners.
- Proceedings of community public engagement meetings conducted in five U.S. cities (Atlanta, GA; Lincoln, NE; Seattle, WA; Syracuse, NY; Washington, DC) in October-November 2006.
- Public opinion poll results conducted by the Harvard School of Public Health in September-October 2006 surveying 1,697 adults in the United States regarding their willingness to follow public health officials' recommendations for selected pandemic mitigation interventions.
- Peer-reviewed mathematical modeling to assess potential pandemic mitigation interventions during an influenza pandemic.
- Expert opinion of public health officials, including published findings and recommendations of the Committee on Modeling Community Containment for Pandemic Influenza (Institute of Medicine, 2006).
- Preliminary results from a November 2006 Epi-Aid investigation of a seasonal influenza outbreak with associated school closure.
- Preliminary results from review of legal authorities/policies of school closure in each state conducted by the Center for Law and the Public's Health.

In addition, stakeholders from government, academia, private industry, educational organizations, and faith-based and community organizations reviewed and evaluated these data during public stakeholder meetings in June and December 2006. The opinions from individuals in the working group and stakeholders were considered during the writing of this guidance.

Pandemic planning with respect to the implementation of these pandemic mitigation interventions must be citizen-centric and support the needs of people across society in as equitable a manner as possible. Accordingly, the process for developing this interim pre-pandemic guidance sought input from key stakeholders, including the public. While all views and perspectives were respected, a hierarchy of values did in fact emerge over the course of the deliberations. In all cases, the question

was whether the cost of the interventions was commensurate with the benefits they could potentially provide. Thus, there was more agreement on what should be done when facing a severe pandemic with a high case fatality ratio (e.g., a 1918-like pandemic) than on what should be done when facing a pandemic with a lower case fatality ratio (e.g., a 1968-like pandemic); even with the inherent uncertainties involved, the cost-benefit ratio of the interventions clearly becomes more favorable as the severity increases and the number of lives potentially saved increases. Many stakeholders, for example, expressed concern about the effectiveness of the proposed interventions, which cannot be demonstrated *a priori* and for which the evidence base is limited and of variable quality. However, where high rates of mortality could be anticipated in the absence of intervention, a significant majority of stakeholders expressed their willingness to "risk" undertaking interventions of uncertain effectiveness in mitigating disease and death. Where scenarios that would result in 1918-like mortality rates were concerned, most stakeholders reported that aggressive measures would be warranted and that the value of the lives potentially saved assumed precedence over other considerations. However, the feasibility of these approaches has not been assessed at the community level. Local, State, regional, and Federal exercises will need to be conducted to obtain more information about the feasibility and acceptance of these measures. In addition, ongoing engagement with the public, especially vulnerable populations, is essential.

CDC Community Mitigation Strategy Team acknowledges the following for their contributions to the development of this document

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Appendix 3. – WHO Phases of a Pandemic/U.S. Government Stages of a Pandemic

PANDEMIC INFLUENZA

WHO Global Pandemic Phases and the Stages for Federal Government Response

WHO Phases		Federal Government Response Stages	
INTER-PANDEMIC PERIOD			
1	No new influenza virus subtypes have been detected in humans. An influenza virus subtype that has caused human infection may be present in animals. If present in animals, the risk of human disease is considered to be low.	0	New domestic animal outbreak in at–risk country
2	No new influenza virus subtypes have been detected in humans. However, a circulating animal influenza virus subtype poses a substantial risk of human disease.		
PANDEMIC ALERT PERIOD			
3	Human infection(s) with a new subtype, but no human-to-human spread, or at most rare instances of spread to a close contact.	0	New domestic animal outbreak in at–risk country
		1	Suspected human outbreak overseas
4	Small cluster(s) with limited human-to-human transmission but spread is highly localized, suggesting that the virus is not well adapted to humans.	2	Confirmed human outbreak overseas
5	Larger cluster(s) but human-to-human spread still localized, suggesting that the virus is becoming increasingly better adapted to humans, but may not yet be fully transmissible (substantial pandemic risk).		
PANDEMIC PERIOD			
6	Pandemic phase: increased and sustained transmission in general population.	3	Widespread human outbreaks in multiple locations overseas
		4	First human case in North America
		5	Spread throughout United States
		6	Recovery and preparation for subsequent waves

Page 78 was blank in the printed version and has been omitted for web purposes.

Appendix 4 - Pandemic Influenza Community Mitigation Interim Planning Guide for Businesses and Other Employers

Purpose

This Interim Planning Guide for Businesses and Other Employers is provided as a supplement to the *Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Layered Use of Nonpharmaceutical Interventions.* This guide is intended to assist in pre-pandemic planning. Individuals and families, employers, schools, and other organizations will be asked to take certain steps (described below) to help limit the spread of a pandemic, mitigate disease and death, lessen the impact on the economy, and maintain societal functioning. This guidance is based upon the best available current data and will be updated as new information becomes available. During the planning process, Federal, State, local, tribal, and territorial officials should review the laws, regulations, and policies that relate to these recommendations, and they should include stakeholders in the planning process and resolution of issues.

Businesses and other employers (including local, State, and Federal agencies and other organizations) will be essential partners in protecting the public's health and safety when a pandemic occurs. This *Pandemic Influenza Community Mitigation Interim Planning Guide for Businesses and Other Employers* provides guidance to these groups by describing how they might prepare for, respond to, and recover from an influenza pandemic. When an influenza pandemic starts, public health officials will determine the severity of the pandemic and recommend actions to protect the community's health. People who become severely ill may need to be cared for in a hospital. However, most people with influenza will be safely cared for at home.

Community mitigation recommendations will be based on the severity of the pandemic and may include the following:

1. Asking ill people to voluntarily remain at home and not go to work or out in the community for about 7-10 days or until they are well and can no longer spread the infection to others (ill individuals may be treated with influenza antiviral medications, as appropriate, if these medications are effective and available).

2. Asking members of households with a person who is ill to voluntarily remain at home for about 7 days (household members may be provided with antiviral medications, if these medications are effective and sufficient in quantity and feasible mechanisms for their distribution have been developed).

3. Dismissing students from schools (including public and private schools as well as colleges and universities) and school-based activities and closure of childcare programs for up to 12 weeks, coupled with protecting children and teenagers through social distancing in the community, to include reductions of out-of-school social contacts and community mixing. Childcare programs discussed in this guidance include centers or facilities that provide care to any number of children in a nonresidential setting, large family childcare homes that provide care for seven or more children in the home of the

provider, and small family childcare homes that provide care to six or fewer children in the home of the provider.[1]

4. Recommending social distancing of adults in the community, which may include cancellation of large public gatherings; changing workplace environments and schedules to decrease social density and preserve a healthy workplace to the greatest extent possible without disrupting essential services; ensuring work-leave policies to align incentives and facilitate adherence with the measures outlined above.

Planning now for a severe pandemic (and adjusting your continuity plan accordingly) will help assure that your business is prepared to implement these community recommendations. Businesses and other employers should be prepared to continue the provision of essential services during a pandemic even in the face of significant and sustained absenteeism. Pandemic preparation should include coordinated planning with employees and employee representatives and critical suppliers. Businesses should also integrate their planning into their communities' planning. These preparedness efforts will be beneficial to your organization, staff, and the community, regardless of the severity of the pandemic. The following provide information to guide business planning for a pandemic: *Business Pandemic Influenza Planning Checklist* (www.pandemicflu.gov/plan/business/businesschecklist.html), the *Pandemic Preparedness Planning for U.S. Businesses with Overseas Operations* Checklist, (www.pandemicflu.gov/plan/business/businessesoverseaspdf.pdf), and the *Pandemic Influenza Preparedness, Response and Recovery Guide for Critical Infrastructure and Key Resources* (www.pandemicflu.gov/plan/pdf/cikrpandemicinfluenzaguide.pdf). In addition, recommendations for implementation of pandemic mitigation strategies are available at www.pandemicflu.gov. Reliable, accurate, and timely information on the status and severity of the pandemic also will be posted on www.pandemicflu.gov. Additional information is available from the Centers for Disease Control and Prevention (CDC) Hotline: 1-800-CDC-INFO (1-800-232-4636). This line is available in English and Spanish, 24 hours a day, 7 days a week. TTY: 1-888-232-6348. Questions can be e-mailed to cdcinfo@cdc.gov.

Recommendations for Planning

1. Plan for ill individuals to remain at home

- Plan for staff absences during a pandemic due to personal illness.
  - Encourage ill persons to stay home during a pandemic and establish return-to-work policies after illness.
  - Identify critical job functions and plan for their continuity and how to temporarily suspend non-critical activities, cross-train employees to cover critical functions, and cover the most critical functions with fewer staff.
  - Identify employees who might need extra assistance to stay home when they are ill because, for example, they live alone or have a disability.
  - Review Federal and State employment laws that identify your employer obligations and options for employees.
- Establish and clearly communicate policies on sick (and other) leave and employee compensation.
- Develop a workplace culture that recognizes and encourages behaviors such as voluntarily staying home when ill in order to get well and to avoid spreading infection to others.
- Develop policies on what to do when a person becomes ill at the workplace.
- Provide employees with information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

2. Plan for all household members of a person who is ill to voluntarily remain at home

- Plan for staff absences related to family member illness.
  - Identify critical job functions and plan for their continuity and how to temporarily suspend non-critical activities, cross-train employees to cover critical functions, and cover the most critical functions with fewer staff.
  - Establish policies for an alternate or flexible worksite (e.g., work via the Internet, e-mailed or mailed work assignments) and flexible work hours, where feasible.
  - Develop guidelines to address business continuity requirements created by jobs that will not allow teleworking (e.g., production or assembly line workers).
- Establish and clearly communicate policies on family leave and employee compensation, especially Federal laws and laws in your State regarding leave of workers who need to care for an ill family member or voluntarily remain home.
- Provide employees with information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

3. Plan for dismissal of students and childcare closure

- Identify employees who may need to stay home if schools dismiss students and childcare programs close during a severe pandemic.
- Advise employees not to bring their children to the workplace if childcare cannot be arranged.
- Plan for alternative staffing or staffing schedules on the basis of your identification of employees who may need to stay home.
  - Identify critical job functions and plan now for cross-training employees to cover those functions in case of prolonged absenteeism during a pandemic.
  - Establish policies for employees with children to work from home, if possible, and consider flexible work hours and schedules (e.g., staggered shifts).
- Encourage employees who have children in their household to make plans to care for their children if officials recommend dismissal of students from schools, colleges, universities, and childcare programs. Advise employees to plan for an extended period (up to 12 weeks) in case the pandemic is severe.
- In a severe pandemic, parents would be advised to protect their children by reducing out-of-school social contacts and mixing with other children. Although limiting all outside contact may not be feasible, parents may be able to develop support systems with co-workers, friends, families, or neighbors if they continue to need childcare. For example, they could prepare a plan in which two to three families work together to supervise and provide care for a small group of infants and young children while their parents are at work (studies suggest that childcare group size of less than six children may be associated with fewer respiratory infections).[2]
- Talk with your employees about any benefits, programs, or other assistance they may be eligible for if they have to stay home to mind children for a prolonged period during a pandemic.
- Coordinate with State and local government and faith-based and community-based organizations to assist workers who cannot report to work for a prolonged period.

4. Plan for workplace and community social distancing measures

- Become familiar with social distancing methods that may be used during a pandemic to modify the frequency and type of person-to-person contact (e.g., reducing hand-shaking, limiting face-to-face meetings and shared workstations, promoting teleworking,

offering liberal/unscheduled leave policies, staggered shifts).
- Plan to operate businesses and other workplaces using social distancing and other measures to minimize close contact between and among employees and customers. Determine how the work environment may be reconfigured to allow for more distance between employees and between employees and customers during a pandemic. If social distancing is not feasible in some work settings, employ other protective measures (guidance available at www.pandemicflu.gov).
- Review and implement guidance from the Occupational Safety and Health Administration (OSHA) to adopt appropriate work practices and precautions to protect employees from occupational exposure to influenza virus during a pandemic. Risk of occupational exposure to influenza virus depends in part on whether or not jobs require close proximity to people potentially infected with the pandemic influenza virus or whether employees are required to have either repeated or extended contact with the public. OSHA will post and periodically update such guidance on www.pandemicflu.gov.
- Encourage good hygiene at the workplace. Provide employees and staff with information about the importance of hand hygiene (information can be found at www.cdc.gov/cleanhands/) as well as convenient access to soap and water and/or alcohol-based hand gel in your facility. Educate employees about covering their cough to prevent the spread of germs (www.cdc.gov/flu/protect/covercough.htm).

5. Communicate with your employees and staff

- Disseminate your company's pandemic plan to all employees and stakeholders in advance of a pandemic; include roles/actions expected of employees and other stakeholders during implementation of the plan.
- Provide information to encourage employees (and their families) to prepare for a pandemic by providing preparedness information. Resources are available at www.pandemicflu.gov/plan/individual/checklist.html.

6. Help your community

- Coordinate your business' pandemic plans and actions with local health and community planning.
- Find volunteers in your business who want to help people in need, such as elderly neighbors, single parents of small children, or people without the resources to get the medical or other help they will need.
- Think of ways your business can reach out to other businesses and others in your community to help them plan for a pandemic.
- Participate in community-wide exercises to enhance pandemic preparedness.

7. Recovery

- Assess criteria that need to be met to resume normal operations and provide notification to employees of activation of the business resumption plan.
- Assess the availability of medical, mental health, and social services for employees after the pandemic.

References:

[1] American Academy of Pediatrics. Children in Out-of-Home Child Care: Classification of Care Service. In: Pickering LK, ed. Red Book: 2003 Report of the Committee on Infectious Diseases. 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:124.

[2] Bradley RH. Child care and common communicable illnesses in children aged 37 to 54 months. Arch Pediatr Adolesc Med. 2003 Feb;157(2):196-200

Appendix 5 - Pandemic Influenza Community Mitigation Interim Planning Guide for Childcare Programs

Purpose

This Interim Planning Guide for Childcare Programs is provided as a supplement to the *Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Layered Use of Nonpharmaceutical Interventions.* The guide is intended to assist in pre-pandemic planning. Individuals and families, employers, schools, and other organizations will be asked to take certain steps (described below) to help limit the spread of a pandemic, mitigate disease and death, lessen the impact on the economy, and maintain societal functioning. This guidance is based upon the best available current data and will be updated as new information becomes available. During the planning process, Federal, State, local, tribal, and territorial officials should review the laws, regulations, and policies that relate to these recommendations, and they should include stakeholders in the planning process and resolution of issues.

Childcare programs will be essential partners in protecting the public's health and safety when an influenza pandemic occurs. Childcare programs discussed in this guidance include centers or facilities that provide care to any number of children in a nonresidential setting, large family childcare homes that provide care for seven or more children in the home of the provider and small family childcare homes that provide care to six or fewer children in the home of the provider.[1] This *Pandemic Influenza Community Mitigation Interim Planning Guide for Childcare Programs* provides guidance describing how such programs might prepare for and respond to an influenza pandemic. When an influenza pandemic starts, public health officials will determine the severity of the pandemic and recommend actions to protect the community's health. People who become severely ill may need to be cared for in a hospital. However, most people with influenza will be safely cared for at home.

Community mitigation recommendations will be based on the severity of the pandemic and may include the following:

1. Asking ill people to voluntarily remain at home and not go to work or out in the community for about 7-10 days or until they are well and can no longer spread the infection to others (ill individuals will be treated with influenza antiviral medications, as appropriate, if these medications are effective and available).

2. Asking members of households with a person who is ill to voluntarily remain at home for about 7 days (household members may be provided with antiviral medications, if these medications are effective and sufficient in quantity and feasible mechanisms for their distribution have been developed).

3. Dismissing students from schools (including public and private schools as well as colleges and universities) and school-based activities and closure of childcare programs for up to 12 weeks, coupled with protecting children and teenagers through social distancing in the community to include reductions of out-of-school social contacts and community mixing.

4. Recommending social distancing of adults in the community, which may include cancellation of large public gatherings; changing workplace environments and schedules to decrease social density and preserve a healthy workplace to the greatest extent possible without disrupting essential services; ensuring work-leave policies to align incentives and facilitate adherence with the measures outlined above.

Recommendations for closing childcare facilities will depend upon the severity of the pandemic. The current three-tiered planning approach includes 1) no closure in a Category 1 pandemic, 2) short-term (up to 4 weeks) closure of childcare facilities in a Category 2 or Category 3 pandemic, and 3) prolonged (up to 12 weeks) closure of childcare facilities in a severe influenza pandemic (Category 4 or Category 5). These actions may only apply to traditional forms of center-based care and large family childcare programs (more than six children). Small family childcare programs (less than seven children) may be able to continue operations.

In the most severe pandemic, the duration of these public health measures would likely be for 12 weeks and will undoubtedly have serious financial implications for childcare workers and their employers as well as for families who depend on their services. In a severe pandemic, parents will be advised to protect their children by reducing out-of-school social contacts and mixing with other children. Although limiting all outside contact may not be feasible, families may be able to develop support systems with co-workers, friends, families, or neighbors if they continue to need childcare. For example, they could prepare a plan in which two or three families work together to supervise and provide care for a small group of infants and young children while their parents are at work (studies suggest that childcare group size of less than six children may be associated with fewer respiratory infections).[2]

Planning now for a severe pandemic will help assure that your childcare program is prepared to implement these community recommendations. These preparedness efforts will be beneficial to your programs, staff, families, and the community, regardless of the severity of the pandemic. The *Pandemic Flu Planning Checklist for Childcare Facilities* (www.pandemicflu.gov/plan/school/index.html) provides an approach to planning for a pandemic. Recommendations for implementation of pandemic mitigation strategies are available at www.pandemicflu.gov. Reliable, accurate, and timely information on the status and severity of the pandemic will be posted on www.pandemicflu.gov. Additional information is available from the Centers for Disease Control and Prevention (CDC) Hotline: 1-800-CDC-INFO (1-800-232-4636). This line is available in English and Spanish, 24 hours a day, 7 days a week. TTY: 1-888-232-6348. Questions can be e-mailed to cdcinfo@cdc.gov.

Recommendations for Planning

1. Plan for ill individuals to remain at home

- Develop a plan of childcare operations for implementation during pandemics of all levels of severity.
- Develop a plan for employee absences due to personal illness. Plan for alternative staffing:
  - Identify critical job functions and plan for alternate coverage of those functions during a pandemic. Family childcare programs may consider prearranging childcare coverage with other providers in their areas.
  - Review and analyze Federal and State employment laws that identify employer obligations and options for personnel.
- Establish and clearly communicate policies on sick leave and employee compensation.
- Encourage ill persons to stay home during a pandemic and establish return-to-work policies after illness.
- Establish policies for sick-leave absences unique to a pandemic (e.g., liberal/unscheduled leave).
- Develop policies on observation for illness

and what to do when a child or employee becomes ill at the workplace.
- Advise employees to look for information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

2. Plan for all household members of a person who is ill to voluntarily remain at home

- Develop a plan for employee absences related to family member illness. Plan for alternate staffing:
  - Identify critical job functions and plan now for coverage of those functions.
  - Review Federal and State employment laws that identify your employer obligations and options for employees.
- Establish and clearly communicate policies on family leave and employee compensation.
- Establish policies for sick-leave absences unique to a pandemic (e.g., liberal/unscheduled leave).
- Establish policies for employees who have to stay home because someone in their household is ill with pandemic influenza.
- Be familiar with Federal and State laws regarding leave of workers who need to care for an ill family member or voluntarily remain at home.
- Advise employees to look for information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

3. Plan for dismissal of students from school and childcare closure, considering the impact on employees and parents

- Develop a plan for program operations during all levels of pandemic severity.
- Plan for alternate staffing based on your assessment.
  - Identify critical job functions and plan now for coverage of those functions in case of prolonged absenteeism during a pandemic.
- Work with State and local government and faith-based and community-based organizations to provide any needed assistance to staff who are not able to work for a prolonged period of time.

4. Plan for workplace and community social distancing measures

- Become familiar with social distancing actions that may be used during a pandemic to modify frequency and type of person-to-person contact (e.g., reducing hand-shaking, limiting face-to-face meetings, promoting teleworking, and offering liberal/unscheduled leave policies and staggered shifts).
- Plan to operate the workplace using social distancing and other measures to minimize close contact between employees.
- Review and implement guidance from the Occupational Safety and Health Administration (OSHA) on appropriate work practices and precautions to protect employees from occupational exposure to influenza virus during a pandemic. Risks of occupational exposure to influenza virus depends in part on whether jobs require close proximity to people who may be infectious with the pandemic influenza virus or whether employees are required to have either repeated or extended contact with the general public. OSHA will post and periodically update such guidance on www.pandemicflu.gov.
- If the childcare program is to remain in operation during a Category 1-3 pandemic, provide staff with information about the measures that the program will institute in order to reduce virus transmission among staff and children. These may include
  - Restructuring and keeping groups of staff and children from mixing together to minimize social contacts.
  - Asking ill staff to stay home while they are ill.
  - Modifying exclusion policies to include ill children and possibly, based on public

health recommendations made at the time of the pandemic, those with ill family members.
  - Implementing staggered shifts.
  - Implementing social distancing practices, including
    - Eliminating gatherings of staff and
    - Minimizing contact between staff and parents.
- Encourage good hygiene at the workplace. Provide children and staff with information about the importance of hand hygiene (information can be found at www.cdc.gov/cleanhands/) as well as convenient access to soap and water and alcohol-based hand gel in your facility. Educate employees and children about covering their cough to prevent the spread of germs (see www.cdc.gov/flu/protect/covercough.htm).
- Promote social distancing of children outside the childcare setting by advising parents that children reduce their social interaction and contacts to the greatest extent possible.

5. Communicate with staff and parents/families

- Be prepared to provide parents/families with information about
  - Why programs will be cancelled and the importance of keeping infants and children from congregating with other children in the community.
  - How alternative childcare options may be accessed.
  - How students who need free meals may qualify for other types of nutrition assistance in the community.
- Provide information to staff and parents/families on what they can do to prepare their families for a pandemic. Resources are available at www.pandemicflu.gov/plan/individual/checklist.html and www.ready.gov/america/index.html.
- Provide systematic emergency communications to childcare staff and families during the pandemic. Use a telephone calling tree, an e-mail alert, or call-in voice recording to communicate pandemic status in the community and status of childcare program activities. Messages for staff and families should be targeted and provided in the different languages that reflect the languages within the community.
- Recommend that parents/families seek further information about pandemic through other sources including key Federal, State, local, tribal, and territorial public health resources and regularly provided pandemic updates at www.pandemicflu.gov.

6. Help your community

- Coordinate your pandemic plans and actions with local health and community planning.
- Think of ways your childcare program can reach out to other childcare programs and others in your community to help them plan for a pandemic.
- Participate in community-wide exercises to enhance pandemic preparedness.

7. Recovery

- Establish the criteria and procedures for resuming childcare operations and activities.
- Develop communication plans for advising employees, staff, and families of the resumption of programs and activities.
- Develop the procedures, activities, and services needed to restore the childcare environment.

References:

[1] American Academy of Pediatrics. Children in Out-of-Home Child Care: Classification of Care Service. In: Pickering LK, ed. Red Book: 2003 Report of the Committee on Infectious Diseases. 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:124.

[2] Bradley RH. Child care and common communicable illnesses in children aged 37 to 54 months. Arch Pediatr Adolesc Med. 2003 Feb;157(2):196-200

Appendix 6 - Pandemic Influenza Community Mitigation Interim Planning Guide for Elementary and Secondary Schools

Purpose

This Interim Planning Guide for Elementary and Secondary Schools is provided as a supplement to the *Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Layered Use of Nonpharmaceutical Interventions.* The guide is intended to assist in pre-pandemic planning. Individuals and families, employers, schools, and other organizations will be asked to take certain steps (described below) to help limit the spread of a pandemic, mitigate disease and death, lessen the impact on the economy, and maintain societal functioning. This guidance is based upon the best available current data and will be updated as new information becomes available. During the planning process, Federal, State, local, tribal, and territorial officials should review the laws, regulations, and policies that relate to these recommendations, and they should include stakeholders in the planning process and resolution of issues.

Schools will be essential partners in protecting the public's health and safety when an influenza pandemic occurs. This *Pandemic Influenza Community Mitigation Interim Planning Guide for Elementary and Secondary Schools* provides guidance to educational institutions, describing how they might prepare for and respond to an influenza pandemic. When an influenza pandemic starts, public health officials will determine the severity of the pandemic and recommend actions to protect the community's health. People who become severely ill may need to be cared for in a hospital. However, most people with influenza will be safely cared for at home.

Community mitigation recommendations will be based on the severity of the pandemic and may include the following:

1. Asking ill people to voluntarily remain at home and not go to work or out in the community for about 7-10 days or until they are well and can no longer spread the infection to others (ill individuals will be treated with influenza antiviral medications, as appropriate, if these medications are effective and available).

2. Asking members of households with a person who is ill to voluntarily remain at home for about 7 days (household members may be provided with antiviral medications, if these medications are effective and sufficient in quantity and feasible mechanisms for their distribution have been developed).

3. Dismissing students from schools (including public and private schools as well as colleges and universities) and school-based activities and closure of childcare programs for up to 12 weeks, coupled with protecting children and teenagers through social distancing in the community to include reductions of out-of-school social contacts and community mixing. Childcare programs discussed in this guidance include centers or facilities that provide care to any number of children in a nonresidential setting, large family childcare homes that provide care for seven or more children in the home of the provider and small family childcare homes that provide care to six or fewer children in the home of the provider.[1]

4. Recommending social distancing of adults in the community, which may include cancellation of large public gatherings; changing workplace environments and schedules to decrease social density and preserve a healthy workplace to the greatest extent possible without disrupting essential services; ensuring work-leave policies to align incentives and facilitate adherence with the measures outlined above.

Recommendations for dismissing students from schools will depend upon the severity of the pandemic. The current three-tiered planning approach includes 1) no dissmissals in a Category 1 pandemic, 2) short-term (up to four weeks) dismissal of students from schools during a Category 2 or Category 3 pandemic, and 3) prolonged (up to 12 weeks) dismissal of students from schools during a severe influenza pandemic (Category 4 or Category 5 pandemic).

In the most severe pandemic, the duration of these public health measures would likely be for 12 weeks, which would have educational implications for students. Planning now for a prolonged period of student dismissal may assist schools to be prepared as much as possible to provide opportunities for continued instruction and other assistance to students and staff. Federal, State, local, tribal, and territorial laws, regulations, and policies regarding student dismissal from schools school closures, funding mechanisms, and educational requirements should be taken into account in pandemic planning. If students are dismissed from school but schools remain open, school- and education-related assets, including school buildings, school kitchens, school buses, and staff, may continue to remain operational and potentially be of value to the community in many other ways. In addition, faculty and staff may be able to continue to provide lessons and other services to students by television, radio, mail, Internet, telephone, or other media. Continued instruction is not only important for maintaining learning but also serves as a strategy to engage students in a constructive activity during the time that they are being asked to remain at home.

Planning now for a severe pandemic will ensure that schools are prepared to implement the community interventions that may be recommended. Be prepared to activate the school district's crisis management plan for pandemic influenza that links the district's incident command system with the local and/or State health department/emergency management system's incident command system(s).

The *Pandemic Flu Planning Checklist for K-12 School Districts* describes approaches to school planning for a pandemic and can be found at www.pandemicflu.gov/plan/school/index.html and www.ed.gov/admins/lead/safety/emergencyplan/pandemic/planning-guide/index.html. Recommendations for implementation of pandemic mitigation strategies are available at www.pandemicflu.gov, and reliable, accurate, and timely information on the status and severity of a pandemic will also be posted on the Web site. Additional information is available from the Centers for Disease Control and Prevention (CDC) Hotline: 1-800-CDC-INFO (1-800-232-4636). This line is available in English and Spanish, 24 hours a day, 7 days a week. TTY: 1-888-232-6348. Questions can be e-mailed to cdcinfo@cdc.gov.

Recommendations for Planning

1. Plan for ill individuals to remain at home

- Develop a plan for faculty and staff absences due to personal illness. Plan for alternative staffing:
  - Identify critical job functions and plan for alternate coverage of those functions during a pandemic.
  - Review and analyze Federal and State employment laws that identify employer obligations and options for personnel.
- Establish and clearly communicate policies on sick leave and employee compensation.
- Encourage ill persons to stay home during

a pandemic and establish return-to-work policies after illness.
- Establish policies for sick-leave absences unique to a pandemic (e.g., liberal/unscheduled leave).
- Develop policies on observation for illness and what to do when a student or staff member becomes ill at the workplace.
- Advise employees to look for information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

2. Plan for all household members of a person who is ill to voluntarily remain at home

- Develop a plan for faculty and staff absences related to family member illness. Plan for alternate staffing:
  - Identify critical job functions and plan now for coverage of those functions.
  - Establish policies for alternate or flexible worksite (e.g., videoconferencing and teleworking) and flexible work hours.
  - Review Federal and State employment laws that identify your employer obligations and options for employees.
- Establish and clearly communicate policies on family leave and employee compensation.
- Establish policies for sick-leave absences unique to a pandemic (e.g., liberal/unscheduled leave).
- Establish policies for employees who have to stay home because someone in their household is ill with pandemic influenza.
- Be familiar with Federal and State laws regarding leave of workers who need to care for an ill family member or voluntarily remain at home.
- Advise employees to look for information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

3. Plan for dismissal of students and childcare closure for employees

- Develop a plan for school operations during all levels of pandemic severity. Even if students are dismissed, schools may remain operational.
- Identify and plan for employees and staff who may have to stay home if schools and childcare programs dismiss students/children during a pandemic.
- Plan for alternate staffing based on your assessment.
  - Identify critical job functions and plan now for coverage of those functions in case of prolonged absenteeism during a pandemic.
  - Establish policies for employees to possibly work flexible work hours and schedules (e.g., staggered shifts) to accommodate their childcare needs.
- Encourage your employees who have children to make their own plans to care for children if officials recommend dismissal of students from schools and closure of childcare programs. Advise that employees plan for an extended period (up to 12 weeks) in case the pandemic is severe. Instruct employees not to bring their children to the workplace if childcare cannot be arranged.
- In a severe pandemic, parents would be advised to protect their children by reducing out-of-school social contacts and mixing with other children. Although limiting all outside contact may not be feasible, families may be able to develop support systems with co-workers, friends, families, or neighbors if they continue to need childcare. For example, they could prepare a plan in which two to three families work together to supervise and provide care for a small group of infants and young children while their parents are at work (studies suggest that childcare group size of less than six children may be associated with fewer respiratory infections).[2]

- Determine if schools must, may, or cannot compensate, continue benefits, and extend leave to employees who are not working during the pandemic. Inform employees of the decision.
- Work with your State legislatures if modifications to State laws are needed for flexibilities regarding, for example, requirements for the number of instruction days, amount of instruction time, and length of the school day.
- Work with State and local governments and faith-based and community-based organizations to provide any needed assistance to staff who cannot report to work for a prolonged period.

4. Plan for dismissal of students

- Develop a plan for continuity of instruction
- Inform teachers, students and parents how alternate learning opportunities will be provided.
  - This may include assignments by radio, television, regular mail, e-mail, telephone, and teleconferencing or through the media
  - Consider potential restructuring of the school calendar
- Provide school nurses, counselors, school psychologists, special-needs teachers, and social workers guidance on maintaining needed health, counseling, and social services for students with physical and mental/emotional healthcare needs.
- Identify and inform parents on how students who need free meals may qualify for other types of nutrition assistance in the community.
- Provide systematic emergency communications to school staff and families during the pandemic, using a telephone calling tree, an e-mail alert, call-in voice recording, or regular mail to communicate.

5. Plan for workplace and community social distancing measures

- Become familiar with social distancing actions that may be used during a pandemic to modify frequency and type of person-to-person contact (e.g., reducing hand-shaking, limiting face-to-face meetings, promoting teleworking, liberal/unscheduled leave policies, and staggered shifts).
- Plan to operate the workplace using social distancing and other measures to minimize close contact between employees.
- Review and implement guidance from the Occupational Safety and Health Administration (OSHA) on appropriate work practices and precautions to protect employees from occupational exposure to influenza virus during a pandemic. Risks of occupational exposure to influenza virus depends in part on whether jobs require close proximity to people who may be infectious with the pandemic influenza virus or whether employees are required to have either repeated or extended contact with the general public. OSHA will post and periodically update such guidance on www.pandemicflu.gov.
- Encourage good hygiene at the workplace. Provide students, faculty, and staff with information about the importance of hand hygiene (information can be found at www.cdc.gov/cleanhands/) as well as convenient access to soap and water and alcohol-based hand gel in your facility. Educate employees and students about covering their cough to prevent the spread of germs (see www.cdc.gov/flu/protect/covercough.htm).
- Promote social distancing of children and teens outside the school setting by advising they reduce their social interaction and contacts to the greatest extent possible. This may include cancelling after-school and extracurricular group activities.

6. Communicate with faculty, staff, students, and parents/families

- Make sure your school's pandemic plan is explained and understood by faculty, staff, and parents in advance of a pandemic, including expected roles/actions for employees and others during implementation.
- Provide information to school staff and parents/families on what they can do to prepare themselves and their families for the pandemic. Resources are available at www.pandemicflu.gov/plan/individual/checklist.html and www.ready.gov/america/index.html.
  - Be prepared to provide parents/families with information discussing student dismissal from school and the importance of keeping students from congregating with other students in out-of-school settings.
- Provide staff with information on the school district's plan for
  - Assuring that essential central office functions, including payroll, and communications with staff, students, and families will continue.
  - Adapting school facilities to supplement healthcare delivery if needed by local public health officials.
  - Encouraging school nurses, counselors, school psychologists, and social workers to establish supportive long-distance relationships with particularly vulnerable students via the phone, e-mail, or regular mail.
- Coordinate strategies with other districts in your region.

7. Help your community

- Coordinate your pandemic plans and actions with local health and community planning.
- Find volunteers in your school who want to help people in need, such as elderly neighbors, single parents of small children, or people without the resources to get the medical or other help they will need.
- Think of ways your school can help others in your community to plan for a pandemic.
- Participate in community-wide exercises to enhance pandemic preparedness.

8. Recovery

- Establish the criteria and procedure with State and local planning teams for resuming school activities.
- Develop communication for advising employees, students, and families of the resumption of school programs and activities.
- Develop the procedures, activities, and services needed to restore the learning environment.

References:

[1] American Academy of Pediatrics. Children in Out-of-Home Child Care: Classification of Care Service. In: Pickering LK, ed. Red Book: 2003 Report of the Committee on Infectious Diseases. 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:124.

[2] Bradley RH. Child care and common communicable illnesses in children aged 37 to 54 months. Arch Pediatr Adolesc Med. 2003 Feb;157(2):196-200.

Appendix 7 - Pandemic Influenza Community Mitigation Interim Planning Guide for Colleges and Universities

Purpose

This Interim Planning Guide for Colleges and Universities is provided as a supplement to the *Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Layered Use of Nonpharmaceutical Interventions.* The guide is intended to assist in pre-pandemic planning. Individuals and families, employers, schools, and other organizations will be asked to take certain steps (described below) to help limit the spread of a pandemic, mitigate disease and death, lessen the impact on the economy, and maintain societal functioning. This guidance is based upon the best available current data and will be updated as new information becomes available. During the planning process, Federal, State, local, tribal, and territorial officials should review the laws, regulations, and policies that relate to these recommendations, and they should include stakeholders in the planning process and resolution of issues.

Colleges and universities will be essential partners in protecting the public's health and safety when an influenza pandemic occurs. This *Pandemic Influenza Community Mitigation Interim Planning Guide for Colleges and Universities* provides guidance to post-secondary institutions, describing how they should prepare for an influenza pandemic. At the onset of an influenza pandemic, public health officials will determine the severity of the pandemic and recommend actions to protect the community's health. People who become severely ill may need to be cared for in a hospital. However, most people with influenza will be safely cared for at home.

Community mitigation recommendations will be based on the severity of the pandemic and may include the following:

1. Asking ill people to voluntarily remain at home and not go to work or out in the community for about 7-10 days or until they are well and can no longer spread the infection to others (ill individuals will be treated with influenza antiviral medications, as appropriate, if these medications are effective and available).

2. Asking members of households with a person who is ill to voluntarily remain at home for about 7 days (household members may be provided with antiviral medications, if these medications are effective and sufficient in quantity and feasible mechanisms for their distribution have been developed).

3. Dismissing students from schools (including public and private schools as well as colleges and universities) and school-based activities and closure of childcare programs for up to 12 weeks, coupled with protecting children and teenagers through social distancing in the community to include reductions of out-of-school social contacts and community mixing. Childcare programs discussed in this guidance include centers or facilities that provide care to any number of children in a nonresidential setting, large family childcare homes that provide care for seven or more children in the home of the provider and small family childcare homes that provide care to six or fewer children in the home of the provider.[1]

4. Recommending social distancing of adults in the community, which may include cancellation of large public gatherings; changing workplace environments and schedules to decrease social density and preserve a healthy workplace to the greatest extent possible without disrupting essential services; and ensuring work-leave policies to align incentives and facilitate adherence with the measures outlined above.

Recommendations for dismissing students from college and university classes will depend upon the severity of the pandemic. The current three-tiered planning approach includes 1) no dismissals in a Category 1 pandemic, 2) short-term (up to 4 weeks) dismissal from classes in a Category 2 or Category 3 pandemic, and 3) prolonged (up to 12 weeks) dismissal from classes in a severe influenza pandemic (Category 4 or Category 5).

Dismissing students for up to 12 weeks will have educational implications. Planning now for a prolonged period of student dismissal will help colleges and universities to plan for alternate ways to provide continued instruction and services for students and staff. Even if students are dismissed from classes, the college/university facility may remain open during a pandemic and may continue to provide services to students who must remain on campus and provide lessons and other services to off-campus students via Internet or other technologies. Some students, particularly international students, may not be able to rapidly relocate during a pandemic and may need to remain on campus for some period. They would continue to need essential services from the college/university during that time.

Continued instruction is not only important for maintaining learning but also serves as a strategy to reduce boredom and engage students in a constructive activity while group classes are cancelled. Planning now for a severe pandemic will help assure that your college or university is prepared to implement these community recommendations. These preparedness efforts will be beneficial to your school, staff, students, and the community, regardless of the severity of the pandemic. Be prepared to activate the university's crisis management plan for pandemic influenza, which links the university's incident command system with the local and/or State health department/emergency management system's incident command system(s).

The *Pandemic Flu Planning Checklist for Colleges and Universities* describes approaches to school planning for a pandemic and can be found at www.pandemicflu.gov/plan/school/index.html and www.ed.gov/admins/lead/safety/emergencyplan/pandemic/planning-guide/index.html. Recommendations for implementation of pandemic mitigation strategies are available at www.pandemicflu.gov, and reliable, accurate, and timely information on the status and severity of a pandemic will also be posted on this site. Additional information is available from the Centers for Disease Control and Prevention (CDC) Hotline: 1-800-CDC-INFO (1-800-232-4636). This line is available in English and Spanish, 24 hours a day, 7 days a week. TTY: 1-888-232-6348. Questions can be e-mailed to cdcinfo@cdc.gov.

Recommendations for Planning

1. Plan for ill individuals to remain at home

- Develop a plan for faculty and staff absences due to personal illness. Plan for alternative staffing.
  - Identify critical job functions and plan for alternate coverage of those functions during a pandemic.
  - Review and analyze Federal and State employment laws that identify employer obligations and options for personnel.
- Establish and clearly communicate policies on sick leave and employee compensation.
- Encourage ill persons to stay home during a pandemic and establish return-to-work policies after illness.
- Establish policies for sick-leave absences

unique to a pandemic (e.g., liberal/ unscheduled leave).
- Develop policies on observation for illness and what to do when a student or staff member becomes ill at the college/university.
- Advise employees to look for information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

2. Plan for all household members of a person who is ill to voluntarily remain at home

- Develop a plan for faculty and staff absences related to family member illness. Plan for alternate staffing.
  - Identify critical job functions and plan now for coverage of those functions.
  - Establish policies for alternate or flexible worksite (e.g., videoconferencing and teleworking) and flexible work hours.
  - Review Federal and State employment laws that identify your employer obligations and options for employees.
- Establish and clearly communicate policies on family leave and employee compensation.
- Establish policies for sick-leave absences unique to a pandemic (e.g., liberal/ unscheduled leave).
- Establish policies for employees who have to stay home because someone in their household is ill with pandemic influenza.
- Be familiar with Federal and State laws regarding leave of workers who need to care for an ill family member or voluntarily remain at home.
- Advise employees to look for information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

3. Plan for dismissal of students and childcare closure for employees

- Identify and plan for employees and staff who may have to stay home if schools and childcare programs dismiss students/children during a severe pandemic.

- Plan for alternate staffing based on your assessment.
  - Identify critical job functions and plan for coverage of those functions in case of prolonged absenteeism during a pandemic.
  - Establish flexible work policies for employees, such as flexible work hours and schedules (e.g., staggered shifts) to accommodate childcare needs.
- Encourage your employees who have children to make their own plans to care for children if officials recommend dismissal of students from schools and closure of childcare programs. Advise that employees plan for an extended period (up to 12 weeks) in case the pandemic is severe. Instruct employees not to bring their children to the workplace if childcare cannot be arranged.
- In a severe pandemic, parents will be advised to protect their children by reducing out-of-school social contacts and mixing with other children. Although limiting all outside contact may not be feasible, families may be able to develop support systems with co-workers, friends, families, or neighbors, if they continue to need childcare. For example, they could prepare a plan in which two to three families work together to supervise and provide care for a small group of infants and young children while their parents are at work (studies suggest that childcare group size of less than six children may be associated with fewer respiratory infections).[2]
- Determine if schools must, may, or cannot compensate, continue benefits to and extend leave to employees who are not working during the pandemic. Inform employees of the decision.
- Coordinate with State and local government and faith-based and community-based organizations to assist staff that are not able to work for a prolonged period.

4. Plan for dismissal of students

- Inform students about plans and procedures for providing and completing course work.
- Provide guidance to students and faculty on continuing student instruction. Such guidance may include
  - Assessing the possibility of altering course-work requirements.
  - Providing ongoing assignments by regular mail, e-mail, Internet links, telephone, teleconferencing, or calling into a recorded message at the university
  - Gathering information in advance that would identify students' mailing addresses, telephone/cell numbers, and e-mail addresses
- Encouraging faculty who teach the same subject to share in the development of distance-learning instructional materials for their students.
- Providing information on accessing university healthcare staff (e.g., nurses, nurse practitioners, physicians, physician assistants, counselors, and psychologists) who could be recommended as consultation resources for students with physical and mental/emotional healthcare needs.
- Develop a plan for accommodating students, especially international students, who remain on campus during an influenza pandemic.
- Review and implement guidance from the Occupational Safety and Health Administration (OSHA) on appropriate work practices and precautions to protect employees from occupational exposure to influenza virus during a pandemic. Risks of occupational exposure to influenza virus depends in part on whether or not jobs require close proximity to people who may be infectious with the pandemic influenza virus or whether employees are required to have either repeated or extended contact with the public. OSHA will post and periodically update such guidance on www.pandemicflu.gov.

5. Plan for workplace and community social distancing measures

- Learn about social distancing methods that may be used during a pandemic to limit person-to-person contact during a pandemic and reduce the spread of disease (e.g., reducing hand-shaking, limiting face-to-face meetings and shared workstations, work from home policies, staggered shifts).
- Use social distancing measures to minimize close contact at your college/university. Determine how your facility could be rearranged to allow more distance between people during a pandemic.
- Develop plans for alternatives to mass gatherings. Examples could range, for example, from video messages on the Internet to e-mailed messages, mailed newsletters, pre-recorded messages on a designated call-in phone number.
- Encourage good hygiene at the workplace. Provide faculty, staff, and students with information about the importance of hand hygiene (information can be found at www.cdc.gov/cleanhands/) as well as convenient access to soap and water and alcohol-based hand gel in your facility. Educate faculty, staff, and students about covering their cough to prevent the spread of germs (see www.cdc.gov/flu/protect/covercough.htm).

6. Communicate with faculty, staff, students, and parents/families

- Provide faculty, staff, and parents with information on the college/university's pandemic preparedness plan in advance of a pandemic. This communication should include
  - Identifying expected roles/actions for faculty, staff, students, and other stakeholders during implementation
  - Assuring that essential central office functions, including payroll, and communications with staff, students and families will continue

  - Identifying how the college/university's physical facilities may be used for other purposes during a pandemic
- Develop a plan to inform parents/families that students may be dismissed during a Category 4-5 pandemic.
  - Encourage them to plan for that contingency, including plans for relocating students to home or elsewhere
  - Inform them of school procedures and policies regarding tuition, fees, and contractual obligations
- Provide systematic emergency communications to faculty, staff, and students (both on and off campus) during the pandemic by using multiple methods (e.g., a telephone calling tree, an e-mail alert, or call-in voice recording) to communicate pandemic status in the community and status of classes and other university activities.
- Be prepared to provide parents/families with information discussing
  - How dismissal of students will be announced
  - Why students will be dismissed from classes and the importance of keeping students from congregating with others in the community
  - How alternate instruction will be provided
- Be prepared to provide students who soon will be leaving for home with information discussing
  - Why students are being dismissed from classes and the importance of keeping students from congregating with other students in the community. Students should understand
    - Differences between seasonal and pandemic influenza
    - How influenza is spread
    - What individuals can do help prevent the spread of influenza

- Remind students who live in residence halls to take their books and other personal items with them on the last day of classes, if indicated.
- Provide information to university faculty, staff, and parents/families on what they can do to prepare their families for the pandemic. Resources are available at www.pandemicflu.gov/plan/individual/checklist.html and www.ready.gov/america/index.html.
- Recommend that faculty, staff, students and their families seek further information about the pandemic through resources, including key Federal, State, and local public health that provide regular updates on the status of the pandemic. For reliable, accurate, and timely information about pandemic flu, see www.pandemicflu.gov.

7. Help your community

- Coordinate your pandemic plans and actions with local health planning.
- Find volunteers in your college/university who want to help people in need, such as elderly neighbors, single parents of small children, or people without the resources to get the medical or other help they will need.
- Think of ways your institution can reach out to others in your community to help them plan for a pandemic.
- Participate in community-wide exercises to enhance pandemic preparedness.

8. Recovery

- Establish with State and local planning teams the criteria and procedures for resuming college/university activities.
- Develop communication for advising employees and students and families of the resumption of school programs and activities.
- Develop the procedures, activities, and services needed to restore the learning environment.

References:

[1] American Academy of Pediatrics. Children in Out-of-Home Child Care: Classification of Care Service. In: Pickering LK, ed. Red Book: 2003

Report of the Committee on Infectious Diseases. 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:124.
[2] Bradley RH. Child care and common communicable illnesses in children aged 37 to 54 months. Arch Pediatr Adolesc Med. 2003 Feb;157(2):196-200.

Appendix 8 - Pandemic Influenza Community Mitigation Interim Planning Guide for Faith-Based and Community Organizations

Purpose

This Interim Planning Guide for Faith-based and Community Organizations is provided as a supplement to the *Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Layered Use of Nonpharmaceutical Interventions.* The guide is intended to assist in pre-pandemic planning. Individuals and families, employers, schools, and faith-based and community organizations will be asked to take certain steps (described below) to help limit the spread of a pandemic, mitigate disease and death, lessen the impact on the economy, and maintain societal functioning. This guidance is based upon the best available current data and will be updated as new information becomes available. During the planning process, Federal, State, local, tribal, and territorial officials should review the laws, regulations, and policies that relate to these recommendations, and they should include stakeholders in the planning process and resolution of issues.

Faith-based and community organizations (FBCOs) will be essential partners in protecting the public's health and safety when an influenza pandemic occurs. This *Pandemic Influenza Community Mitigation Interim Planning Guide for Faith-Based and Community Organizations* provides guidance for religious organizations (including, for example, places of worship—churches, synagogues, mosques, and temples—and faith-based social service providers), social service agencies, and community organizations in preparing for and responding to an influenza pandemic. When an influenza pandemic starts, public health officials will determine the severity of the pandemic and recommend actions to protect the community's health. People who become severely ill may need to be cared for in a hospital. However, most people with influenza will be safely cared for at home.

Community mitigation recommendations will be based on the severity of the pandemic and may include the following:

1. Asking ill people to voluntarily remain at home and not go to work or out in the community for about 7-10 days or until they are well and can no longer spread the infection to others (ill individuals will be treated with influenza antiviral medications, as appropriate, if these medications are effective and available).

2. Asking members of households with a person who is ill to voluntarily remain at home for about 7 days (household members may be provided with antiviral medications, if these medications are effective and sufficient in quantity and feasible mechanisms for their distribution have been developed).

3. Dismissing students from schools (including public and private schools as well as colleges and universities) and school-based activities and closure of childcare programs for up to 12 weeks, coupled with protecting children and teenagers through social distancing in the community to include reductions of out-of-school social contacts and community mixing. Childcare programs discussed in this guidance include

centers or facilities that provide care to any number of children in a nonresidential setting, large family childcare homes that provide care for seven or more children in the home of the provider and small family childcare homes that provide care to six or fewer children in the home of the provider.[1]

4. Recommending social distancing of adults in the community, which may include cancellation of large public gatherings; changing workplace environments and schedules to decrease social density and preserve a healthy workplace to the greatest extent possible without disrupting essential services; and ensuring work-leave policies to align incentives and facilitate adherence with the measures outlined above.

Planning now for a severe pandemic will help assure that your organization is prepared to implement these community recommendations. These preparedness efforts will be beneficial to your organization, volunteer and paid staff, and community, regardless of the severity of the pandemic. The *Faith-Based & Community Organizations Pandemic Influenza Preparedness Checklist* (available at www.pandemicflu.gov/plan/community/faithcomchecklist.html) provides an approach to pandemic planning by FBCOs. In addition, recommendations for implementation of pandemic mitigation strategies are available at www.pandemicflu.gov. Reliable, accurate, and timely information on the status and severity of the pandemic also will be posted on www.pandemicflu.gov. Additional information is available from the Centers for Disease Control and Prevention (CDC) Hotline: 1-800-CDC-INFO (1-800-232-4636). This line is available in English and Spanish, 24 hours a day, 7 days a week. TTY: 1-888-232-6348. Questions can be e-mailed to cdcinfo@cdc.gov.

Recommendations for Planning

1. Plan for ill individuals to remain at home

- Plan for employee and volunteer staff absences during a pandemic due to personal illness.
  - Identify critical job functions and plan how to temporarily suspend non-critical activities, cross-train staff to cover critical functions, and cover the most critical functions with fewer staff.
  - Identify employees, volunteers, and members or clients that live alone or might need extra assistance if they need to stay home because they are ill.
  - Review Federal and State employment laws that identify your employer obligations and options for employees.
- Establish and clearly communicate policies on sick leave and employee compensation.
- Encourage ill persons to stay home during a pandemic and establish return to work policies after illness.
- Encourage leadership to model staying at home when ill as well as the use of proper cough and sneeze etiquette and hand hygiene.
- Where appropriate, align public health messages and recommendations with your organization's values and beliefs. For example, develop a culture that recognizes the positive behaviors of voluntarily staying home when ill to get well and avoid spreading infection to others.
- Develop policies on what to do when a person becomes ill at the workplace.
- Advise employees, volunteers, and members or clients to look for information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

2. Plan for all household members of a person who is ill to voluntarily remain at home

- Plan for employee and volunteer staff absences during a pandemic related to family member illness.

- Identify critical job functions and plan how to temporarily suspend non-critical activities, cross-train staff to cover critical functions, and cover the most critical functions with fewer staff.
- Establish policies for alternate or flexible worksite (e.g., work via the Internet, e-mail, mailed or phone work assignments) and flexible work hours.

- Establish and clearly communicate policies on family leave and employee compensation, especially Federal laws and laws in your State regarding leave of workers who need to care for an ill family member or voluntarily remain at home.
- Establish and clearly communicate policies for volunteers to ensure that critical functions are covered.
- Advise staff and members to look for information on taking care of ill people at home. Such information will be posted on www.pandemicflu.gov.

3. Plan for dismissal of students and childcare closure

- Find out how many employee and volunteer staff may have to stay at home to care for children if schools and childcare programs dismiss students.
  - Identify critical job functions and plan for temporarily suspending non-critical activities and cross-training staff to cover critical functions with fewer staff.
  - Establish policies for staff with children to work from home, if possible, and consider flexible work hours and schedules (e.g., staggered shifts).
- Encourage staff with children to make plans for what they will do if officials recommend dismissal of students from schools and closure of childcare programs. Instruct staff and volunteers not to bring their children to the workplace if childcare cannot be arranged.
- In a severe pandemic, parents will be advised to protect their children by reducing out-of-school social contacts and mixing with other children. Although limiting all outside contact may not be feasible, parents may be able to develop support systems with co-workers, friends, families, or neighbors, if they continue to need childcare. For example, they could prepare a plan in which two to three families work together to supervise and provide care for a small group of infants and young children while their parents are at work (studies suggest that childcare group size of less than six children may be associated with fewer respiratory infections).[2]
- Help your staff explore about benefits they may be eligible for if they have to stay home to mind children for a prolonged period during a pandemic.

4. Prepare your organization

- Consider potential financial deficits due to emergencies when planning budgets. This is useful for pandemic planning and many other unforeseen emergencies, such as fires and natural disasters.
- Many FBCOs rely on community-giving to support their activities. Develop strategies that will allow people to continue to make donations and contributions via the postal service, the Internet, or other means if they are at home for an extended period.
- Develop a way to communicate with your employee and volunteer staff during an emergency to provide information and updates.
- Meet with other FBCOs to develop collaborative efforts to keep your organizations running, such as large organizations collaborating with small ones or several small organizations working together.

5. Plan for workplace and community social distancing measures

- Learn about social distancing methods that may be used during a pandemic to limit person-to-person contact during a pandemic and reduce the spread of disease (e.g., reducing hand-shaking, limiting face-to-face meetings and shared workstations, work from home policies,
staggered shifts).
- Use social distancing measures to minimize close contact at your facility. Determine how your facility could be rearranged to allow more distance between people during a pandemic.
- Develop plans for alternatives to mass gatherings. Examples could range from video messages on the Internet to e-mailed messages, mailed newsletters, pre-recorded messages from trusted leaders on a designated call-in phone number, and daily teaching guides from trusted leaders.
- Encourage good hygiene at the workplace. Provide staff, volunteers, and members with information about the importance of hand hygiene (information can be found at www.cdc.gov/cleanhands/) as well as convenient access to soap and water and alcohol-based hand gel in your facility. Educate employees about covering their cough to prevent the spread of germs (see www.cdc.gov/flu/protect/covercough.htm).
- Identify activities, rituals, and traditions, such as hand shaking, hugging, and other close-proximity forms of greeting that may need to be temporarily suspended or modified during a pandemic.
- Review and implement guidance from the Occupational Safety and Health Administration (OSHA) to adopt appropriate work practices and precautions to protect employees from occupational exposure to influenza virus during a pandemic. Risks of occupational exposure to influenza virus depends in part on whether or not jobs require close proximity to people potentially infected with the pandemic influenza virus or whether they are required to have either repeated or extended contact with the general public. OSHA will post and periodically update such guidance on www.pandemicflu.gov.

6. Communicate with your employee and volunteer staff and members

- Share your organization's pandemic plan, including expected roles/actions for employee and volunteer staff and members during implementation.
- Suggest that all employee, volunteers, and members or clients prepare for a pandemic. Resources are available at www.pandemicflu.gov/plan/individual/checklist.html and www.ready.gov/america/index.html. For example, individuals and families should have a reserve supply of food and water. People with more resources might consider obtaining enough supplies to support 1-2 other families in an emergency.
- Ensure that your organization has up-to-date contact information for employees, volunteers, and members or clients, including names of family members, addresses, home, work, and cell phone numbers, e-mail addresses, and emergency contacts.

7. Help your Community

- Identify people who are vulnerable and may need assistance in your community (i.e., elderly people who live alone, persons with disabilities, people with limited skill in speaking English, low-income families, children, or teens who may lack supervision). Designate people from your organization to be responsible to check on specific vulnerable people or families.
- Determine ways your facility might be used during a pandemic, such as a temporary care facility or a central distribution site for providing meals, supplies, or medicine to those who cannot obtain them.

- Identify and meet with local emergency responders, health departments, and healthcare organizations to learn about their planning and educate them about your organization's planning.
- Suggest that each household maintain a current list of emergency contacts in your community.
- Meet with other FBCOs to develop collaborative efforts to care for those in need, such as large organizations partnering with small ones or several small organizations working together.
- Identify employee and volunteer staff in advance who would be willing to help others in need during a pandemic and help them to receive training through the local health department, emergency services, or other resources.
- Designate an experienced person who can take calls and organize individuals who call spontaneously to volunteer during an emergency to facilitate the best use of their particular skills and experience.
- Develop or identify an existing mental health or counseling hotline that people in the community can call during a pandemic or other emergency.
- Participate in community-wide exercises to enhance pandemic preparedness.

8. Recovery

- Assess which criteria would need to be met to resume normal operations.
- Plan for the continued need for medical, mental health, and social services after a pandemic.

References:

[1] American Academy of Pediatrics. Children in Out-of-Home Child Care: Classification of Care Service. In: Pickering LK, ed. Red Book: 2003 Report of the Committee on Infectious Diseases. 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:124.

[2]Bradley RH. Child care and common communicable illnesses in children aged 37 to 54 months. Arch Pediatr Adolesc Med. 2003 Feb;157(2):196-200.

Appendix 9 - Pandemic Influenza Community Mitigation Interim Planning Guide for Individuals and Families

Purpose

This Interim Planning Guide for Individuals and Families is provided as a supplement to the *Interim Pre-Pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Layered Use of Nonpharmaceutical Interventions.* The guide is intended to assist in pre-pandemic planning. Individuals and families, employers, schools, and other organizations will be asked to take certain steps (described below) to help limit the spread of a pandemic, mitigate disease and death, lessen the impact on the economy, and maintain societal functioning. This guidance is based upon the best available current data and will be updated as new information becomes available. During the planning process, Federal, State, local, tribal, and territorial officials should review the laws, regulations, and policies that relate to these recommendations, and they should include stakeholders in the planning process and resolution of issues.

Individuals and families will have an essential role in protecting themselves and the public's health and safety when an influenza pandemic occurs. This *Pandemic Influenza Community Mitigation Interim Planning Guide for Individuals and Families* provides guidance describing how individuals and families might prepare for and respond to an influenza pandemic. At the onset of an influenza pandemic, public health officials will determine the severity of the pandemic and recommend actions to protect the community's health. People who become severely ill may need to be cared for in a hospital. However, most people with influenza will be safely cared for at home.

Community mitigation recommendations will be based on the severity of the pandemic and may include the following:

1. Asking ill people to voluntarily remain at home and not go to work or out in the community for about 7-10 days or until they are well and can no longer spread the infection to others (ill individuals will be treated with influenza antiviral medications, as appropriate, if these medications are effective and available).

2. Asking members of households with a person who is ill to voluntarily remain at home for about 7 days (household members may be provided with antiviral medications, if these medications are effective and sufficient in quantity and feasible mechanisms for their distribution have been developed).

3. Dismissing students from schools (including public and private schools as well as colleges and universities) and school-based activities and closure of childcare programs for up to 12 weeks, coupled with protecting children and teenagers through social distancing in the community to include reductions of out-of-school social contacts and community mixing. Childcare programs discussed in this guidance include centers or facilities that provide care to any number of children in a nonresidential setting, large family childcare homes that provide care for seven or more children in the home of the provider and small family childcare homes that provide care to six or fewer children in the home of the provider.[1]

4. Recommending social distancing of adults in the community, which may include cancellation of large public gatherings; changing workplace environments and schedules to decrease social density and preserve a healthy workplace to the greatest extent possible without disrupting essential services; and ensuring work-leave policies to align incentives and facilitate adherence with the measures outlined above.

Planning now for a severe pandemic will assist you and your family as you prepare for interventions that might be recommended. Resources are available at www.pandemicflu.gov/plan/individual/checklist.html and www.ready.gov/america/index.html. In addition, reliable, accurate, and timely information on the status and severity of a pandemic and recommendations for implementation of pandemic mitigation strategies is available at www.pandemicflu.gov. Additional information is available from the Centers for Disease Control and Prevention (CDC) Hotline: 1-800-CDC-INFO (1-800-232-4636). This line is available in English and Spanish, 24 hours a day, 7 days a week. TTY: 1-888-232-6348. Questions can be e-mailed to cdcinfo@cdc.gov.

Recommendations for Planning

1. Plan for ill individuals to remain at home

- Be prepared to stay at home if you are ill with pandemic influenza. Information on taking care of ill people at home will be posted on www.pandemicflu.gov.
  - It will be important to have extra supplies on hand during a pandemic, as you may not be able to get to a store or stores may be out of supplies. You should have a reserve of at least a two-week supply of water and food; however, if the pandemic is severe, community disruption may last for a longer period. If community water supplies are not suitable for consumption during a pandemic, your local water utility or public health authorities will notify the community.
  - Periodically check your regular prescription drugs to ensure a continuous supply in your home.
  - Have any nonprescription drugs and other health supplies on hand, including a thermometer, pain relievers, stomach remedies, cough and cold medicines, and other over-the-counter medicines that you and your family use on a regular basis.
  - Designate one person in the household who could be the caregiver if anyone in the household becomes ill with pandemic influenza. Develop an alternate plan for someone to be the caregiver if that person becomes sick.
  - Talk with neighbors, friends, and family about your plans for staying at home if you or someone in your household is ill. Share ideas.
  - Ensure that each household has a current list of emergency contacts in your community, including mental health and counseling resources.

2. Plan for all household members of a person who is ill to voluntarily remain at home

- Be prepared to stay at home if someone in your household is ill. Information on taking care of ill people at home will be posted on www.pandemicflu.gov.
  - Have any nonprescription drugs and other health supplies on hand, including a thermometer, pain relievers, stomach remedies, cough and cold medicines, and other over-the-counter medicines that you and your family use on a regular basis.
  - Talk with family members and members of your household about how they would be cared for if they become ill and about what will be needed to care for them in your or their home.
  - Designate one person in the household who could be the caregiver if anyone in the household becomes ill with pandemic flu. Make plans for a backup if that person gets ill.

- Consider how to care for people in your household with special needs in case the services they rely on are not available.
- Talk with neighbors, friends, and family about your plans for staying at home if someone in your household is ill. Share ideas.
- Ensure that each household has a current list of emergency contacts in your community, including mental health and counseling resources.

3. Plan for dismissal of students and childcare closure

- If you have children in your household, make plans for their care if officials recommend dismissal of students from schools and closure of childcare programs.
  - Plan and arrange now for who will care for children if schools and childcare programs dismiss students and children during a pandemic. Plan for an extended period (up to 12 weeks) in case the pandemic is severe.
  - Do not plan to bring children to the workplace if childcare cannot be arranged.
  - If you have children in a college or university, have a plan for the student to relocate or return home, if desired, or if the college/university dismisses students, at the onset of a Category 4-5 pandemic.
  - Plan home-learning activities and exercises. Have materials, such as books, on hand.
  - Public health officials will likely recommend that children and teenagers do not gather in groups in the community during a pandemic. Plan recreational activities that your children can do at home.
  - Find out now about the plans at your child's school or childcare facility during a pandemic.
- In a severe pandemic, parents will be advised to protect their children by reducing out-of-school social contacts and mixing with other children. Although limiting all outside contact may not be feasible, parents may be able to develop support systems with co-workers, friends, families, or neighbors, if they continue to need childcare. For example, they could prepare a plan in which two to three families work together to supervise and provide care for a small group of infants and young children while their parents are at work (studies suggest that childcare group size of less than six children may be associated with fewer respiratory infections).[2]

4. Plan for workplace and community social distancing measures

- Become familiar with social distancing actions that may be used during a pandemic to modify frequency and type of person-to-person contact (e.g., reducing hand-shaking, limiting face-to-face meetings, promoting teleworking, liberal/unscheduled leave policies, and staggered shifts).
- Talk to your employer
  - Talk to your employer about the pandemic influenza plan for your workplace to include issues about benefits, leave, telework, and other possible policies to go into effect during a pandemic.
  - Ask your employer about how your employer will continue during a pandemic if key staff cannot come to work.
  - Plan for the possible reduction or loss of income if you are unable to work or your place of employment is closed. Consider maintaining a cash reserve.
  - Check with your employer or union about leave policies for workers who are ill, live in a household with someone ill with pandemic influenza, or have to take off work to take care of children.
  - Find out if you can work from home.
  - Discuss alternative ways of holding meetings at work, including, for example, teleconferences, during a pandemic.
  - Find out how you will receive information from your employer during a pandemic.

- Prepare backup plans in case public gatherings, such as community events and meetings and worship services, are cancelled.
  - Talk with others in your community about other ways of communicating during a pandemic if public gatherings are cancelled
  - Plan for recreational activities that you and your household members can do at home if community gatherings are cancelled during a pandemic.
  - Discuss with your faith-based organization or place of worship their plans for communicating with members during a pandemic.

5. Help others

- Prepare backup plans for taking care of loved ones who are far away.
- Find volunteers who want to help people in need, such as elderly neighbors, single parents of small children, or people without the resources to get the medical help they will need.
- Think of ways you can reach out to others in your neighborhood or community to help them plan for and respond to a pandemic.

References:

[1]American Academy of Pediatrics. Children in Out-of-Home Child Care: Classification of Care Service. In: Pickering LK, ed. Red Book: 2003 Report of the Committee on Infectious Diseases. 26th ed. Elk Grove Village, IL: American Academy of Pediatrics; 2003:124.

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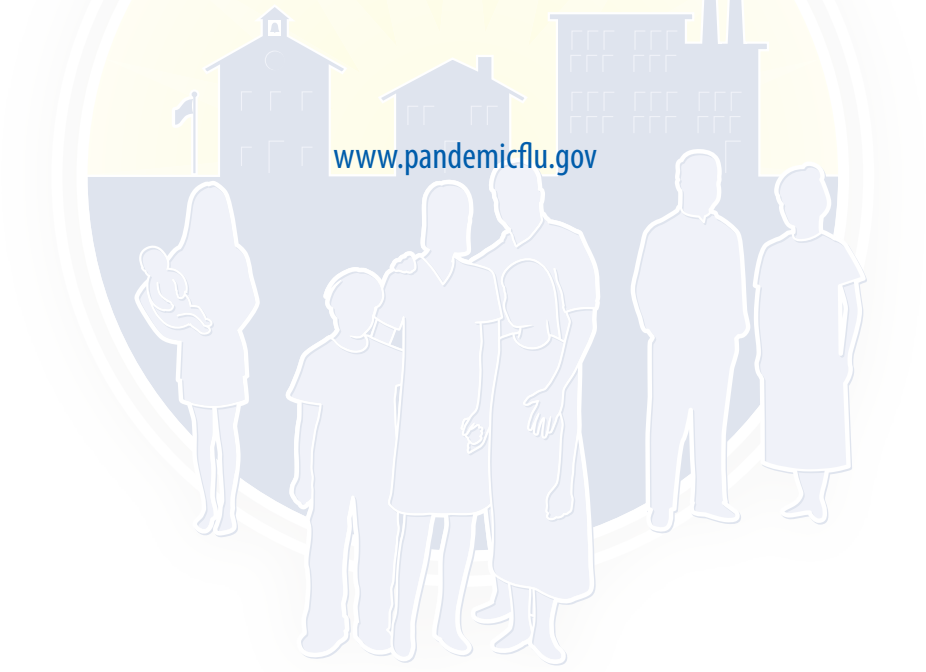

www.pandemicflu.gov

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